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Observations on the climate, soil, and productions
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OBSERVATIONS
ON THE
CLIMATE, SOIL, AND PRODUCTIONS
OF
BRITISH GUIANA,
AND ON
THE ADVANTAGES OF EMIGRATION TO,
AND
COLONIZING THE INTERIOR OF, THAT COUNTRY:

TOGETHER WITH INCIDENTAL REMARKS ON THE DISEASES, THEIR TREAT-
MENT AND PREVENTION; FOUNDED ON A LONG EXPERIENCE
WITHIN THE TROPICS.

BY

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TO THE
PRESIDENT, COUNCIL, AND MEMBERS
OF THE
ROYAL GEOGRAPHICAL SOCIETY
OF LONDON,—

AS A HUMBLE TOKEN OF RESPECT
FOR THEIR EXTRAORDINARY ZEAL AND EMINENT EXERTIONS
IN PROMOTING A SCIENCE OF
THE MOST TRANSCENDENT IMPORTANCE
TO THE BRITISH EMPIRE,
TO CIVILIZED SOCIETY, AND MANKIND AT LARGE,—

THIS SMALL ESSAY
IS, WITH PERMISSION, INSCRIBED,
BY THEIR DEVOTED,
HUMBLE SERVANT,

THE AUTHOR.

June, 1835.



PREFACE.

THE author of the following pages deems it necessary briefly to advert to the grounds on which they are offered to the public. He sojourned from the year 1804 to 1828, inclusive, in South America, and chiefly in British Guiana, where he followed his professional pursuits: and with the view of acquiring some knowledge of the botany of a country most rich in medicinal plants, and of some peculiar practices followed with great success by the inland tribes, in the cure of diseases, he frequently visited the Interior by the rivers Essequibo, Demerara, Pomeroon, Orinoco, &c. On one occasion he travelled more than a thousand miles amongst the rivers, forests, and savannahs (or two thousand going and returning); and he presumes that no one has ever traversed this extensive country to a greater aggregate distance than himself;—not even excepting the *wanderings* of his esteemed friends Waterton and Hilhouse, or even of the illustrious Baron de Humboldt. Not wishing the matter, however, to rest on his own testimony, he has adduced the evidence of travellers who have visited the interior parts of Guiana, which will be deemed, it is hoped, sufficiently corroborative of what he has stated from his own observation.

If the author's attention was especially directed to the divers medicinal substances, of barks, roots, gums, balsams, &c.—and which he certainly con-

sidered as the most important objects,—still, it will not be supposed he could regard with indifference the climate, soil, and varied productions of a country so rich and so favoured by nature as is the country known, we might say only by the name of *BRITISH GUIANA*.

The present Essay may be found composed of rather crude remarks, and thrown together excursively, without much regard to methodical arrangement,—in which desirable talent the author could never lay claim to any high endowment: in a trivial essay, like the present, however, it is hoped that this fault will not be regarded with severity.

Although, as Pope says, “self-love, the spring of action, moves the soul,” the author has not, in drawing up the following remarks, had any other object in view than that of directing public attention to one of the most desirable countries on the globe for colonization,—in order to relieve the sufferings of the poor,—to excite travellers and colonists to examine the hidden treasures of a country unexplored, and thus to extend the boundaries of science, of commerce, manufactures, and all the arts of peace,—by which those of war will become less desirable. It is a remark we have often heard repeated, that this country is never so happy as when engaged in war: I can never believe, however, that rapine and plunder are necessary to the prosperity of a great and magnanimous people. In fine, I trust that, should the present humble Essay meet with no other encouragement, it may at least move others of more ability to engage in the promotion of objects so important.

The main part of the MS. was lately read at a meeting of the Verulam Philosophical Society of London, and excited a lively interest among its members.

It may not be improper to remark that this Society has been formed for the purpose of admitting a mutual interchange of sentiment and free discussion amongst the friends of literature, science, and art, —nearly on the original plan of the Royal Society; but embracing subjects in general, less abstract, and perhaps of more popular interest, if not of more general utility; and one material advantage will be, its *universal accessibility to genius and talent*, without a 50*l.* or 60*l.* *douceur*, which most significantly implies that none but the wealthy can claim distinction for talents or learning; whereas the spirit of the age declares that the reverse is at least often true, and this must be the more apparent as the rays of science become disseminated amongst the people: such a society, therefore, precluding the fellowship of no honest man, however humble his station in life, appears to have been rightly regarded as a desideratum; and with pleasure we have seen some liberal-minded and wealthy men come forward in its support.

This advertence will, it is hoped, be excused, as the objects of the Society appear to have been misapprehended by some, and by one gentleman especially, to whom the public is deeply indebted for his arduous exertions in favour of the common weal.

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ERRATA.

Page 33, line 18, *for drive read derive*

Page 34, line 25, *read*, and follow up the same means at later periods, &c.

OBSERVATIONS, &c.

INTRODUCTORY REMARKS.

THE very general distress prevailing in this country, and the numbers of people wanting employment, have suggested the project of forming an Association or Company for assisting destitute persons, and families especially, with the means of removing to the British Colonies of Guiana, as being probably the most eligible for Emigrants, and as affording to industrious persons, greater facilities for procuring the comforts of life than any other part of the world. The following remarks (in MS.) having been read by several gentlemen of extensive commercial knowledge, a suggestion has been thrown out to establish a Company on a similar plan to that of the Swan River, or the North American Emigration Company, as these appear to be of the most liberal character. By the co-operation of gentlemen concerned in the Shipping trade, Merchants, and proprietors of Estates, such a project would doubtless be soon carried into effect; and when the positive advantages are more fully apparent, there can be no doubt of its experiencing the most extended support.

The poor-rates in England are certainly enormous; yet the distress is such as no one would believe who has not examined into it. Many plans for relief have been devised

by benevolent individuals, and by none, perhaps, more judiciously than that by Earl Stanhope, in the allotment of waste lands; for the cultivation at home certainly appears to be of paramount and primary importance. Yet the views of this philanthropic nobleman have not been realized, nor received, I believe, the consideration they deserve; from what cause I know not. They may have met with opposition from deep-rooted prejudice, interest, or ignorance; and the Noble Earl certainly erred if he expected to find all landowners equally liberal-minded. This I may say, after studying the matter with some attention, His Lordship having kindly inclosed me a copy of his papers on the subject. In fact, it appears that, under prevailing impressions, emigration alone will avail, or meet the concurrence of all parties.

But this measure may perhaps be regarded as one of vital interest, considering the situation in which the Colonies are now placed, by the measures recently introduced, and by the great disparity in numbers between the black and the white population. It appears, indeed, that such emigration is essential to the preservation of the Colonies as integral parts of the British Empire, and that this alone can render them rich and productive, preserve order, and secure the property embarked by the present possessors.

It is fully evident that the Colonies are useful as an outlet for the surplus population, for the unfortunate, the labouring poor, and for the enterprising part of the community. According to some authentic statements, England is more densely peopled than any other district of equal extent, not even excepting China or Japan.

But the advantages thus accruing to the mother country will not be overlooked by the wise statesman, who sees the necessity of emigration from populous countries; a principle which has been recognised and acted on in all ages,

the wisest legislators ever having borne testimony in its favour. In a flourishing country like Great Britain, most rich in resources, unrivalled in enterprise and industry, but teeming with an overabundant population, emigration becomes, we may say, not only advantageous, but indispensable.

Nor has the importance and necessity of encouraging this sort of enterprise been overlooked by the wisdom of the British Government; and the urgency of the measure has impelled vast numbers to embark for distant colonies, where their industry may be turned to incalculable benefits to themselves and their posterity, whilst it serves to augment the British Empire, and extend its power and commerce in all quarters of the globe. It is true some narrow-minded politicians would maintain the doctrine that emigration tends to paralyse and weaken the parent state. Nothing can, indeed, be more palpably false than this assertion; it is contradicted by facts, and the sophistry is too absurd to need many words in its refutation.

National wealth and power have ever been found to increase with the accession of colonies, and to decline in proportion as these fall off: history abundantly testifies to these facts; and that of ancient Rome especially. In later times, the colonial possessions of Spain have, from bad management, nearly all been lost, and her foreign commerce, which formerly extended over the globe, is thereby almost annihilated. Napoleon Buonaparte, with his forty millions of subjects, became fully sensible that nothing but ships, colonies, and commerce could enable him to cope with the power of Great Britain.

I may here quote a few words from a well-written pamphlet, entitled, *Practical Advice on Emigration*. "From various causes, the fields of employment have become crowded, and the labouring classes are looking about for

more room and better means of subsistence; emigration, under such an impulse, resembles a stream from an overflowing fountain, which may be guided, but cannot be stopped.

“I deny,” said William Penn, “the vulgar opinion that plantations [colonies] weaken England; they have manifestly enriched and strengthened her; the industry of those who go into a foreign plantation is worth more than if they stayed at home.” Again, England furnishes them with clothes, household stuff, tools, and the like necessities, and in greater quantities than at home their condition could have needed, or they could have bought, and they often return with riches to England; one in this capacity being able to buy out twenty of what he himself was when he went out.

Prince Talleyrand, who has lived to see France *lose* all her colonies in the East and West Indies, and *again establish them* on the coast of Africa, has remarked that, with the ancient Governments, the predominant policy appears to have been, that “Bodies politic ought to reserve to themselves the means of placing to advantage a superabundance of citizens, who may, from time to time, threaten their tranquillity. It belongs to our enlightened navigators, he says, to tell the Government what are the places where a new country, a salubrious climate, and a fruitful soil invite our industry, and promise us richer advantages.”

The late Lord Chancellor of England long since expressed himself in similar terms: “The colonial trade is one always increasing, and capable of indefinite augmentation, while the other branches of traffic are of necessity on the wane: it is as beneficial as a home trade. Capital taken from the mother country to her colonies is not withdrawn from the empire; it continues to support the productive part of the community. It is a narrow-minded

policy which would consider *colonies* as separate and subservient appendages of the State; they are *integral* parts of the empire which is *happy enough* to possess them, and they ought to be considered as such."

Soil, and Advantages of Cultivation in the Interior.

Guiana presents a great diversity of soil, but the following are the principal:—1st, the clayey or alluvial marshy land of the coast, which extends usually some six or eight miles aback from the sea; 2ndly, the hills of sand and gravel, with some intervening morasses, extending to the falls; and 3rdly, the deep soil of the interior. Below the falls, indeed, are many fertile spots; but these are of limited extent. Unfortunately, both the Dutch and English planters have heretofore confounded this intermediate district with the primitive soil of the interior, or mountainous regions, and they continue to judge of the latter from what they observe below the falls, notwithstanding the great geological disparity.

The coast lands, being an alluvial deposit from the sea and great rivers, have indeed, when rendered mellow by labour (the sea being kept out), been found rich and productive, and they are still so on the Essequibo coast, one of the richest slips of land on the earth. To windward of this, however, the soil is in a great measure exhausted, so that numerous plantations (hundreds probably,) are abandoned in Demerara and Berbice, as giving no adequate return for the labour required to keep up the cultivation, especially since the slave trade was abolished.

The mountainous country, on the contrary, presents to view divers coloured ochres, indurated clays, and volcanic products which repose on the granite, with various mixtures of loamy earth and vegetable mould to a vast extent. Beyond this we meet with extensive savannahs or prairies, chiefly clay and gravel, affording pasture for cattle.

The seasons are divided into wet and dry, which, inland, are very regular, but less so on the coast; and there is a perpetual verdure throughout the year. In the intermediate levels between the ridges of the falls of Essequibo, the river annually overflows its banks: when this occurs, it never fails to leave a fertilizing deposit, such as gives a perennial verdure to the banks of the Nile, and like that of the *intervale* lands so termed, or fertile meadows of the river Connecticut in its course, especially between New Hampshire and Vermont.

Most planters have considered the labour of slaves to be indispensable to successful cultivation on the coast; and with reason perhaps, as heretofore conducted. It is certain, indeed, that the cultivation of the coast cannot be continued unless it be by the means suggested—by the introduction of emigrants, and the use of animal labour. In proof of this, we might instance the island of Hayti, where, notwithstanding the endeavours of despotic chiefs, the cultivation has so declined, that there is not now a sufficiency of sugar produced for the use of the inhabitants.

None but Hollanders could ever, on such a continent, have thought of robbing the sea, or fencing it out from a swampy coast with such immense labour, as is found continually necessary to keep up the cultivation. The original Dutch colonists, indeed, seem to have sought, in this country, only another Holland, and they, in a district boundlessly rich and uncultivated, set, at an early period, about gaining land from the sea! They accordingly planted themselves on the muddy lands of the sea-shore, where they had the comforting reflection that they must necessarily be drowned by the sea on one side or by the *bush-water* on the other, unless they were protected by dykes.

In some instances, however, the Dutch at first cultivated the lands up the rivers; but, in addition to their aquatic propensities, their attention was directed to the coast,—

1st, by the facility then existing of procuring slaves in abundance, and at a very trifling expense from the coast of Africa; 2ndly, by the necessity of keeping a military force inland to overawe the Caribees; and 3rdly, by the immediate contiguity to the shipping.

The first two motives have, by the course of events, since been removed, by the abolition of the slave trade, and by the conciliation of the native tribes, who are no longer to be dreaded. The third consideration is unworthy of regard in a country watered, as is Guiana, by numerous large rivers. But the planters, in the mean time, appear to be unaware of the advantages of the interior, and continue plodding on in the old system, not knowing how to avert that destruction which awaits them,—notwithstanding, there lies not far off a soil rich in fertility, boundless in extent, and requiring only some improvements as to water-carriage and roads, to render it more accessible and speedily productive.

On the cultivation of the interior, what I am now about to state I vouch for from personal observation in various parts of Interior Guiana, on the Essequibo and Parime, as well as on the Orinoko, where I had the opportunity for more than three years of observing the avails of agriculture, and of seeing persons of no pecuniary funds becoming rich with very slight industry.

It was also exemplified amongst those tribes who, as Mr. Humboldt says, “inhabit the country so little known between the sources of the Orinoko, and those of the rivers Essequibo, Carony and Parime*,” of which we may say

* Pers. Narr., vol. vi. p. 40.—It is, indeed, very little known. Many of the rivers, or chief tributaries of the Essequibo are quite unheard of. I have found the old Dutch charts to approach much nearer the truth than any of the late ones, which are supposed most correct. The Dutch,

with the Abbe de Pradt, "Let us not dispute the fact, but candidly confess that, as yet, America is only discovered in name, and geographically. The treasures it contains are still buried riches, which its freedom alone can discover to the Old World."

In further illustration of this, I may observe, that there is, or was not long since existing a coffee-field up the Esse-qui-bo, (at Ooropocary, about 40 leagues inland,) which has been planted at a period unknown, supposed to be about the first settlement of the Dutch, and this is found to continue bearing in abundance,—nature alone, on this fertile soil, keeping up a reproduction of the trees! It is a fact, that these interior lands will produce far more sugar, coffee, cocoa, &c., than the sea coast, and that with half the labour! Of this I have had the fullest demonstration up the Orinoko, where the most abundant crops of cocoa and coffee are produced, equal to those of Caraccas.

The planters are not aware of this; and when, in regard to sugar in particular, I remarked to them the size of the canes, and that they often exceeded thirty feet in length, it was thought quite impossible. On the coast, they commonly grow upright, and to the height of six or eight feet; but inland, their growth is so luxuriant, that they often fall and stretch to a great length on the ground. I may add too, that these enormous growths are found almost in a state of nature, or without any weeding, trenching, or

indeed, appear to be better geographers than any other nation; that is, in their delineations of the courses of rivers, positions of places, &c. But what could have induced them to give the denomination of *creek* (kreek) to each of the rivers, excepting a very few of the largest, appears to me unaccountable,—and equally so, how it should be followed by their successors, the English, unless it be purely a reverence for antiquity. This term, both in the Dutch and English, and in the Saxon root, constantly signified an arm, bay, or back water, and never a river or stream of running water.

labour of drainage; and besides, they contain a more pure saccharine juice, without that impregnation of sea-salt which, in new lands on the coast, impedes the granulation of the sugar.

The inland tribes, moreover, are fond of agriculture, and there the plough would be used with vast advantages. The use of the plough was introduced with astonishing effect among the Cherokees, the Creek, and the Seminole Indians of North America. This was done by the immortal Washington, whose military greatness was of a different stamp from that of tyrants and of great commanders in general; and this act towards the Indians was viewed by philanthropic minds as one of the most glorious of his life, but the deeds of his successors have been lamentably different, as witnessed in the exterminating warfare pursued against these once happy people.

The lands alluded to are not only best adapted for the staple articles of sugar, coffee, cocoa*, cotton, and indigo, but equally so for numerous others, which will not thrive on the coast. No soil can be more congenial for the produce of dates, figs, olives, and grapes of superior quality, as proved by the Friars of Carony; as well as for the various aromatics and spiceries, such as the nutmeg, cloves, ginger, allspice, and cinnamon†. From the illiberal policy

* It is strange, indeed, that this valuable production, requiring so little labour, should have been so neglected on a soil the most congenial to it, especially by those who are aware of the grateful and restorative properties of *cacao* or the chocolate nut, well named by the great Swedish naturalist, *Theobroma*—food of the gods.

† The writer has observed a wild kind of cinnamon on the mountains of Reponony and Parime. It is called by the Caribees *Wabaima*, and by the Portuguese, *Caska preciosa*. It grows to a very large tree, having a sweet aromatic bark. The natives represent its wood as being very durable.

of the Spanish Government, and old Spain being the country of grapes and olives, the cultivation of these and various other products was prohibited in Spanish Guiana. This is the natural soil of the odoriferous vanilla, which has been taken to Martinique and sold at from fourteen to twenty dollars the pound. Dyeing woods, cochineal, wild honey, gum copal, &c., abound in the forests, beside a multitude of treasures unknown to Europeans.

Many of our most valuable and expensive medicines, moreover, could be cultivated here with facility; as opium and ipecacuanha, which would give a quick return. The more humid parts would likewise produce the invaluable Sarsa de Rio Negro (*Smilax siphilitica*), which doubtless, with a little research, might be found growing wild*.

It is not improbable that some of the more febrifuge species of cinchona (Peruvian bark tree) would be found on the mountain Mackerapan, or others of the elevated range of Parime. But, whether found indigenous or not, this would afford a proper soil for its cultivation, which would be desirable now that the cinchona forests on the declivity of the Andes are becoming exhausted.

The Rubiaceous plants are especially numerous in Guiana. There are several different species of coffee growing

* Some information on this important remedy will be found in the Trans. of the Med. Bot. Society—(CHURCHILL, Princes-street, Soho); in which I pointed out the superiority of the *Sarsa of Rio Negro*, and the proper mode of its preparation; which has I am told been adopted in certain European and American Dispensatories. I must observe, however, that I know nothing of the medicines sold under my name both here and in North America, purporting to be formed from the Rio Negro Sarsaparilla,—and which are advertised ostensibly as my own. These were got up entirely without my knowledge or concurrence. No preparation of this or any other kind has ever been vended by, or for me. This declaration is considered necessary, because my name is so conspicuously employed.

wild in the interior parts, as well as of the *Cephalus* genus, of which the true ipecacuanha is one; and there can be no doubt that the cinchona will likewise be found, all these being of the same natural family. Another tree (of a new genus perhaps) found in Pomeroon, and described by the writer, affords a tonic and febrifuge bark, not inferior to cinchona. See Med. and Phys. Journal for January 1833.

Besides all this, no country in the world abounds more in valuable timber-trees for ship-building, cabinet-work, &c. It is here worthy of remark, that the forest trees do not impede those of humbler growth. The coffee, vanilla, and various others, even require the shade of other trees. In this respect the tropical regions differ from those of higher latitudes, although this fact has hitherto scarcely been known or appreciated, and we see the most valuable timber and fruit trees wantonly sacrificed in clearing the lands in equinoctial America.

Of these, and other native treasures, the medicinal plants, gums, barks, fruits, &c., some account will be given in a proposed work on Guiana. The attention of Europeans was long since excited by the fables of El Dorado, and of the Lake Parime, where the writer has travelled; but whether these contain mines of precious metals or not, their greatest riches, no doubt, consist in the vegetable products of the soil. These lands are but an extension of those visited by Humboldt, on the Rio Negro, which that celebrated traveller designates a *new world* of plants, and where he was confounded by the profusion of new vegetable forms.

The nutritive vegetables too, I must now observe, are grown in great abundance in the interior; as yams, cassada, plantains, sweet potatoes, Indian corn. Of the latter, there is one sort, called Maiz de dos Meses, which, as its name imports, yields in two months from the time it is

committed to the ground. The return of Indian corn is often 2000 to one amongst the Macoosis.

The domestic animals of the interior also are kept with extraordinary facility; as horses, mules, hogs, goats, fowls, &c., and horned cattle multiply so much as to run wild on the savannahs. Indeed, cattle were often killed for their hides and horns, and the flesh left to the vultures for want of salt; and, notwithstanding milk was rich and abundant, no butter or cheese was made, whilst two or three shillings per pound were given for foreign butter: this marked the state of enterprise and industry amongst the Portuguese. Would British commerce and industry be thus effete in a country so unboundedly rich? On the Parime (beyond the western source of the Essequibo), the beef was one halfpenny per pound, whilst it cost in Demerara a guilder or eighteen pence the pound. Besides this, the interior abounds in wild animals, which afford the most delicate and wholesome nourishment; as bush hogs, deer, mypoories, lapas, the great river turtles, and their delicious eggs, as also the manatee, with fish and fowls innumerable. We experienced no want of fish and game in going up the falls, although our party numbered upwards of thirty people.

The rocks afford in the dry season the means of drying and preserving fish, which are caught in vast abundance amongst the falls, especially the *paco*, one of the most delicious articles of food, of which the teeth are formed like those of a sheep, and which feeds entirely on grass and vegetables*. The *lau-lau* (*Silurus* sp.) also is amongst the

* The morocoto, cartabac, and some others are of similar structure, and feed on divers plants, fruits, and nuts, which they crush with their strong molar teeth. Of this group or family of phytivorous fishes, I have a monograph which will, I trust, ere long be published; for their habits, teeth, and internal economy sufficiently distinguish them from all the true fishes hitherto known.

finest as well as the largest of the freshwater fishes, which abound in these rivers: it grows to about ten feet in length, weighing upwards of two hundred pounds. Here is also another extraordinary fish, of very large size, scarcely known to naturalists, called *arapaima*, or *warapaima*, with scales as large as a half-crown piece, and beautifully striate with crimson.

It may further be considered, that the Indians, who abhor the idea of cultivating the coast lands, will labour most cheerfully on the genial soil of the interior; and that their hire will not cost the planters half so much as that of slaves. They know better how to manage these things in the East Indies; and they can therefore, notwithstanding the distance, undersell, and yet make a sufficient profit on their sugars.

On the natives of the interior I may here make one observation. The terms 'Caribee' and 'cannibal' are often confounded: this arose from wilful slander or misrepresentation in the 16th century, owing to the circumstance that the Caribees had too much good sense and spirit to submit, like the other tribes, to degradation and slavery under the control of the monks. It was the falsehoods propagated by wicked men which produced the mandate of the Spanish king declaring them slaves. This was followed by an atrocious crusade, which depopulated the Caribbean countries bordering on the Orinoco*.

I well know the fidelity of the Indians of Guiana, towards the English and Dutch especially, and feel satisfied that they may be relied on with confidence whilst treated as rational beings. The chief, Mahnarawa, and other cap-

* See Petr. Mart., Herrera, Gomara, *Hist. de Ind.*—HUMBOLDT, vol. vi. page 34.

tains of the Caribbees and Macoosis, often expressed their desire to be instructed in certain European arts, as that of making axes, hoes, &c., as well as a wish that the Governor of Demerara would form a colony or settlement in their country. This I represented to the Governor, General Carmichael, who expressed an intention of doing something of the kind; but he died soon afterwards, and the project was dropped.

Throughout this rich and beautiful country, the great rivers Essequibo, Demerara, Courantine, &c., afford an easy transit to the higher lands, whence roads and canals may be opened to any other parts of the interior. If, then, the Government and people of this country desire to render the greatest possible aid to destitute families, to introduce the benefits of civilization amongst the native tribes, and at the same time to assist the planters in forming colonies truly valuable, they will not be backward, I presume, in rendering the necessary aids for effecting objects so desirable.

The author is well aware that a strong prejudice prevails against the South American Colonies as being sickly and unfavourable to European constitutions. This idea, it should be known, arose entirely from the (formerly) unhealthy state of a small strip on the saline swamps of the coast, where the settlements were formed by the Dutch; even here, however, this opprobrium has been in a great measure removed, since the lands have been cleared and drained, and a more salubrious climate can scarcely be found than that of the interior parts now proposed for the settlements: nor should it be passed unnoticed, that one of the chief causes of the mortality which formerly prevailed amongst the troops and Europeans on this coast, arose from the excessive indulgence in spirituous liquors, sleep-

ing in cold air, and stopping the perspiration under the debility so induced. Another cause was referable to the hot woollen clothing preposterously worn by Europeans, which marks the tyrannizing power of fashion. One would suppose it impossible that men of understanding could submit to customs so fatal and perverse.

The superiority in the advantages of emigration to British Guiana over that to Canada or the United States must be very apparent; those who go to the latter necessarily require considerable means of equipment, whilst in the former comparatively small means only are requisite to render their industry and exertions most promptly available. The length and severity of the winters in Canada render the necessary outfits too expensive for many of the emigrants,—for those, indeed, who most require them,—whilst the heat of the summer is equally excessive: for two or three months it is felt even more oppressively than within the tropics; and this the writer knows, from personal experience, to be true. In the Canadas, indeed, the difficulties experienced by the emigrants are very great, especially for the first years, in providing provisions and clothing during the long winters.

As to the most suitable clothing for a hot climate, the example of the Portuguese of Parime should be followed, as infinitely the most comfortable and conducive to health. They here make their own clothing, which consists of white but coarse cotton stuff, which is spun in large threads, and wove in the hand-loom of the Indians. This stuff might be fabricated vastly to more advantage by proper looms. It absorbs the sweat, and preserves the body in a more gratefully cool and uniform temperature than any other species of clothing, and is of extraordinary strength and durability. It is made with the Indian or native cottons, which are of a staple much superior to the Bourbon cot-

ton, or others known and cultivated in the colonies, in Georgia, &c.*

The native products of Guiana are exceedingly multifarious, and present objects of industry and enterprise most diversified: many different vegetables afford cordage and substitutes for hemp and flax of the strongest and most durable kind, as the fibre of the carata, plantain, coquesa, and the bark of certain trees. The silk cottons, and different materials of fine fibre might also be found available to various useful purposes, and furnish new resources to British commerce and industry. Silk-worms might be cultivated most advantageously†, as also the expensive cochineal, this being the native soil of the nopals and cactuses.

But the multifarious objects of industry and enterprise presented in Guiana are beyond conception, and can be but imperfectly indicated here. In short, all the advantages of a fruitful and most healthy climate point out the interior parts of British Guiana as one of the most eligible countries in the world for emigration, and more especially so for destitute families; and the numbers unemployed who are totally unable to meet the expenses of emigration to Australia or to Canada, seem to point out Guiana not only as a most desirable situation, but as the only available one for the poorer and more destitute part of the community;

* Hence the strength of the Caribee hammocks, one of which, as is well known in the colonies, will outlast two or three of the Glasgow hammocks. The varieties of valuable and interesting cottons amongst the natives are here very numerous, and have not been investigated by any one, unless by Mr. Hilhouse, whose researches in the interior are highly deserving of regard.

† The mulberry, *Morus nigra*, for feeding the silk-worms, might be cultivated; but other species of this tree are natural to Guiana, as the Fustic (*Morus tinctoria*), which affords the yellow dye-wood of commerce.

the usual voyage here being not more than a month or six weeks, whilst to Van Diemen's Land or Australia the duration of the voyage is more than quadruple that to Guiana. It should likewise be remembered, that Guiana has never been a receptacle for convicts, or the sweepings of the prisons, as have certain other places of resort for emigrants*.

Vegetable Productions.

The timber on these lands would at least repay the trouble of clearing them. It would be advisable, perhaps, to allow many of the larger trees to remain, especially the more valuable fruit-trees; such, for instance, as the assepoca, boroway, touruneru, which belong to the *Sapotaceæ*, and of which natural family there are many others unknown to botanists; they bear delicious fruits, and furnish timber of great value: as also the saowary (*Pekea tuberculosa* of Aublet), which bears in vast abundance one of the richest and largest nuts in the world; it is much used by the inland tribes, and it is justly esteemed by them as highly alimentary and restorative. The Acqueru is a palm of moderate size, the fruit of which affords an abundance of a sweet bland oil, of a golden yellow colour, and of the finest quality. The large sweet and juicy fruit of the oubudi, *Anacardium giganteum*, affords a delicious wine, and its bark is of great use as an application to foul ulcers†. Although this country has been but little explored, it is rather extra-

* Emigration has lately been proposed, and, I believe, commenced, to Jamaica and other West India islands. Any one, however, acquainted with the localities of each, will need no arguments to prove the superior advantages of Guiana over the insular colonies; and besides, their whole area bears no comparison with that of Guiana.

† This tree (described by the writer in the Med. Bot. Trans.) grows to more than 100 feet in height, and 14 in circumference: only one species has heretofore been known to botanists,—the common *cashew*.

ordinary that this fruit, one of the finest of the American continent, should still remain totally unknown in Europe.

The daalie, or wild nutmeg, (a true species of *Myristica*,) abounds in the interior, and furnishes a vegetable tallow, which forms excellent candles, and, with an alkali, a soap of the finest balsamic quality. Here are numerous species of *Cassia*; the Caoutchuc, which gives the valuable elastic resin, and a multitude of gum resins*. The Haiowa, or incense-tree, (*Amyris ambrosiaca* of Willdenow,) perfumes the forest with its salutiferous balsam; and the great Siruba tree not only furnishes the finest timber in the world for ship-building, but also, by incision, a camphoraceous ethereal fluid, a product which, so far as we know, is without a parallel in nature. The Maatu, besides a pleasant fruit, yields a nutritive vegetable milk, of the same flavour and appearance as cow's milk, or the fluid from the *Palo de vaca*. This tree (Maatu) I found on the banks of Reponony.

The grapes grown in the interior are most delicious, and as much sweeter than those of Europe as the seasons are warmer. Wheat, potatoes, and all the European fruits, no doubt, would flourish on the mountains of Mackerapan, where a cool climate might be attained in a few hours from the banks of Essequibo.

This mountain, the Mackerapan, (about 5000 feet above the level of the sea, and 4000 feet above the plain on which it stands,) is steep and precipitous on the south, facing the savannah, but may be ascended with ease on the east from the river side. This situation would afford a most salutary spot for invalids or convalescents who have suffered from liver complaints, fluxes, and the miasmatic fevers of the coast. The natural advantages are inexhaustible, as

* See Dr. Brewster's Journal of Science for October 1829, for some account of these resinous exudations.

food and clothing, materials for building, the finest ornamental woods, timber-trees, &c.; with a vast arable and fertile tract on the north and east, and immense savannahs adapted to pasturage on the south.

By the Society for the Encouragement of Arts many important products have been introduced from the British colonies, and proved highly useful to the manufacturers. They have in vain offered their highest prize, or 100 guineas, for a substitute for a vegetable tar. No efficient one, however, has yet been obtained, nor will it be found, perhaps, except amongst the trees of Guiana. The *Brea*, so called, or gum-resins of Rio Negro, the same as abounds in the Essequibo, have been found superior, and far more durable than the best Swedish tar; *i.e.* they render the ropes and rigging far more lasting. These are chiefly the produce of certain species of *Icica* and *Moronobea* of Aublet, as I have elsewhere explained, affording a fragrant exhalation, which, in the interior, is considered the most beneficial balsam for the lungs of consumptive persons. Pliny observed, that the Roman forests, abounding with resinous effluvia, were of great advantage to the consumptive; and Bennet, near two centuries past, showed the value of artificial inhalations of this sort.

In fact, this new world of vegetables has never been explored or investigated: many of the plants, indeed, have been made known botanically, that is to say, so far as mere descriptive botany goes, or the notation of external forms; a matter regarded at the present day as a consummate science, although, properly considered, the mere alphabet or stepping-stone to phytology, or genuine botanical science. The intrinsic properties and uses of plants are regarded as matter of little moment or unworthy of notice by those who contemplate the surface only; whilst the native tribes possess the only knowledge of real value on these subjects.

Notices of Animals, &c.

In the month of July many of the rivers in the upland parts not only overflow their banks, but annually inundate a considerable extent of the neighbouring savannahs and forests, where we meet with the manati, porpoise, the fresh-water dolphins, and divers fishes swimming amongst the adjacent sedges and forests; so that the very words used by Horace to express the greatest contrariety to nature is here, in part, found to be realized,—*delphinum appingit sylvis*, &c.,—“a dolphin painted in the woods.” These aquatics not infrequently wander too far, and lose their way back to the bed of the river; and the water declining, they are left the prey of tigers or jaguars, and rapacious birds. There are several species of the tiger or panther kind: one grows to near the size of the royal Bengal tiger. They are rarely known to attack men.

Birds, which furnish wholesome and delicate food, are exceedingly numerous; as divers species of ducks, spur-winged geese, marodi or bush turkeys, anaquaw pheasants, partridges, powis, spoonbills, and other large birds, besides smaller ones in abundance. Two large white birds are found in these parts, called jabiru and tejuju, measuring about six feet between the toes and the beak. The latter is the *Mycteria americanus*, or jabiru of ornithologists (*negro-cope*, or black-head, of the colonists): the former appears to be a nondescript, whilst its native name has been transferred to the known species. The beak of the first is bent downwards, that of the other is recurved. On our journey inland both supplied us with *beef-steaks*, as we termed them, having the same taste precisely, and, to our taste, a more savoury one could scarcely have been served up by Mr. Ude himself at the Thatched House tavern.

During the dry season inland, we had occasional showers,

which, in the mountainous regions, were usually announced by the piping tree-frogs, but especially by the bill-birds (Toucan), which, before rains, make a noise precisely like the barking of little dogs, so that several times we were deceived, believing ourselves near some Indian habitation. It has by some been supposed that the porpoise of the interior rivers is identical with that of the ocean, and that they migrate annually, like the salmon in Europe, between the salt and fresh water. This idea appears to be erroneous; for the Portuguese on the Parime say they are seen *tumbling* in the Branco all the year round, and have never been observed passing the rapids of that river, lower down, between the Parime and Rio Negro. They, doubtless, belong exclusively to the fresh water; and, supposing they annually descended to the ocean, it would be a journey, back and forth, of not less than three thousand miles. It is rather singular that this animal, so inoffensive to man,—rather his friend, according to ancient story,—is the greatest enemy of the cayman, and the only master he knows in the watery element. So that we find here a contradiction to the little stories of juvenile books,—

“The crocodile, with watery eyes,
O'er man and every creature cries.”

The habits of the cayman are most extraordinary; and, from what I have seen, I can almost give credit to some extravagant relations of the Indians respecting a mode of capturing it by certain natives (the Otomacs especially), *i. e.* by descending cautiously, and fastening a rope round the monster's body, when, by a signal, he is drawn ashore with the man on his back *! I have often observed it will lie still in the water, its snout only above it, and suffer one's close approach before it will move, or show the smallest consciousness of being approached, when of a

* “This,” says the printer's devil, “reminds one of Mr. Waterton's pleasant tour on the back of the cayman—in search of the *picturesque*.”

sudden it gives a terrible plunge to the bottom; hence, at times they would seem to sleep with their eyes open. I never saw the smallest disposition in them to attack men. This is not the case, however, in the Orinoko, especially since the war: from the numerous bodies thrown into the river, these great reptiles seem to have acquired a relish for human flesh. The first one we met with on going up the Essequibo I approached and struck with a paddle; his precipitate retreat drenched us with water, and nearly overturned our small canoe.

I have observed three species of crocodiles in Guiana: the kykooty of the coast, the most common, smaller, and found almost from Paraguay to Lake Huron: the acarú and pow-pow are said to grow to twenty or twenty-five feet in length, but I have not seen them above sixteen feet in Essequibo; in the Orinoko they grow larger. Two other kinds are mentioned by the natives, which I have never seen to my knowledge, the *teri-teri*, a large species, and a small yellow one, less than the kykooty, only four or five feet in length, (name forgotten,) inhabits the cooler upland parts. It is remarkable that the larger species of the saurian tribe are now confined almost to the tropics, although the fossil remains of gigantic species are dug up in the colder parts of the globe.

Both land and freshwater tortoises are abundant; several species are large, and much esteemed as food; others, smaller, are finely painted†. These belong to the division

* For some account of the different caymans and alligators of Guiana, see Professor Jameson's Philosophical Journal, No. 11.

† Some of these will live a long time (and one nine days, it is said, after the head is cut off); yet, by the application of a morsel of the poison of worary, that of ticunas, or prussic acid, it expires in a few minutes. This, coupled with other facts, as, respecting acephalous monsters, &c., may serve to show us the delusions of those theorists who pretend that these or other poisons act upon, and destroy life through the medium of the *brain* exclusively.

of *Emys*. Their colour, as in fishes, varies according to the localities, or colour of the pools they inhabit; a circumstance which has caused much confusion with some naturalists, and hence divers names have been given to one and the same species. The colours, therefore, should never be taken for specific differences. We find, for instance, in authors *, *Emys subrufa*, *E. punctata*, *E. rubriventris*, *E. concinna*, *E. scripta*, *E. cinerea*, *E. fusca*, *E. lutescens*. We find no instance of this mode of nomenclature in Linné's genus *Testudo*. He had the sagacity, no doubt, to observe the mutability of colours in these animals.

A passion for novelty and new names renders natural history a perpetual chaos—a confusion of tongues; one instance may afford an example. A slender kind of lizard, found in Guiana, (*Chalcide* of Lacépède,) has been honoured by famous naturalists with no less than six or eight different *generic* names. On this M. Cuvier, after enumerating them, makes the laconic remark,—“ Mais tous ces genres se réduisent à une seule espèce,” (*Règne Animal*, tom. ii. p. 66.) This animal is called *mari-mari* by the natives, probably from its rapid movements. The *mari-mari* dance of the Caribees is celebrated amongst all the tribes of Guiana.

There are two species of electrical eel in the rivers and lakes, that is, two *Gymnoti*, which possess the electric power. The nondescript species is black; it has a broad head, and grows very large. I saw one caught at the lake of Angostura which measured eight feet in length. It is said to form a luscious and delicate viand †, yet the natives

* See Cuvier's *Règne Animal*, tom. ii. p. 11.

† One of the most delicate epicurean dishes is said to be prepared from the Cassie, or *Jackie-fish*, so called in Surinam, although no other than the *Rana paradora*, Linn. So accurately does it, in the larva state, resemble a fish, that even the natives have confounded it with a freshwater species of *Silurus*, called *Cassie*, and hence the Arowak name. I brought

mostly refuse it, probably from some superstitious motive. The electrical eel is thought to inhabit South America only, but it also exists in Africa. I have conversed with several intelligent negroes from the Ebo and Mandingo country, who were well acquainted with the *Yaria*, so called. We know little, indeed, of the interior of Africa, and much might be learnt from the natives.

It is known that the *Gymnotus* will not shock his keeper, unless very roughly handled: Mr. W. King, of Georgetown, had a black domestic, who appeared to be proof against the power of the eel, or not obnoxious to its shock; he could handle any of them as he pleased; he said he was protected, or *cured*, as he termed it, by an Obia man in his own country, by means of certain herbs, against the power of the eel. I may remark here, that similar stories told respecting *inoculation with the guaco* against the bites of venomous serpents have come entirely from the Africans; and it is not true, as pretended, that the native Indians employed this practice.

The organ which furnishes the mysterious electric or galvanic power in the electrical eel lies under a muscular fascia along each side and posterior part of the body; it constitutes its only weapon or defence, for the teeth are very weak and small. This fish has rarely been brought alive to Europe, although many have attempted it: the motion of the vessel is said to drown them!

This kind of discussion, I must confess, is rather foreign to the purposes of the present essay, but I trust the reader will excuse it. The foregoing brings to mind another animal, which, from information of the Caribees, seems to be a

to London, and deposited in the British Museum, this animal, in all its stages of transformation or metamorphosis, between the cassie form and the perfect frog. Bingley, I observe, says it is not to be found in any museum or public institution in England.

species of *Siren*, called by them *Anacapataima*, literally, the animal or serpent with two hands: they represent it to be two or three feet in length, brown, and (like the *Siren lacertina*, Linn.) living in pools and marshy places in the interior, but sallies forth at night in quest of food; preying on frogs and reptiles.

It would seem rather strange, if such an uncommon animal does inhabit Guiana, that it should not have become known to Europeans; and yet it is difficult to imagine that the natives could otherwise have formed an idea of one so like that already known: for several of the Caribees, at different times, on seeing the figure, have exclaimed ‘*Anacapataima!*’ And it remains for future travellers or European settlers, perhaps, to verify the truth of this report, and to ascertain if a biped of this sort really exists in the interior parts of South America*. On further reflection, indeed, I cannot doubt the fact, and I have found a note I made from the testimony of the Caribe king, or chief of the inland tribes, Mahanarwa, who came down to the coast in 1819, and, after such a lapse of time, he said, (eight years,) he came to repay my visit. A remarkable sensibility and mildness of manners distinguished this man from the subordinate chiefs. His father had been the *caqui*, or cacique, of the Caribees, and Mahanarwa had travelled with him throughout Guiana. No man was so well acquainted with the country and the different tribes of Indians; and in long conversations I availed myself of the information he was ever ready to impart. In fact, he was the most intelligent and correct of all the Indians I ever met with: he gave me a succinct account of the state of the inland tribes at that

* I brought to England in 1828 a small serpentine animal, with the rudiments of fore feet, which was exhibited at the Zoological Museum; but this appeared to be nearly allied to the *Anguis bipes*, Linn.

period, besides numerous hints of value pertaining to the natural history and geography of the interior, and withal added his testimony to that before acquired respecting the biped serpent, and which he described in similar terms to those above stated. Mr. Humboldt has said, with his usual sagacity, that the Indians are the best geographers for their country, and I have been almost tempted to add, the best naturalists and physicians also.

On entering the Macoosy country, we summoned a meeting of all the chiefs of that part (Etacka), in the name of His Majesty, as authorized by the Governor of Demerara. This was done to inquire into the nature of their disputes, and the petty warfare then carried on, and to ascertain how far the supremacy of Mahanarwa was there recognised. According to what had been stated, we found that most of their troubles arose out of slave bickerings; and besides, as of old, the fortunes of a fair Helen were mixed up amongst them. There were present, besides fourteen Macoosy captains, several from the Caribees and Atorias. They unanimously agreed that Mahanarwa was not only *caqui* of the Caribees, but was acknowledged by themselves and by all the other tribes. An old Macoosy captain said that Mahanarwa had travelled more than any other man amongst the other nations: he knew them all, he said, was a wise and good man, and therefore the right one to govern. The *caqui*, they informed us, was either hereditary, or elected by an assemblage of their chiefs, and could only be deposed by a majority in a public council.

Geological Notice.

The chief component of the swamps or morass lands at the back of the settlements, consists of a black, carbonaceous, vegetable matter, called pegass, which, towards the Pomeeroon and behind the estates, is not unfrequently found

to have a depth of 6 or 8 feet. This is altogether distinct, and forms a great contrast with the alluvial land of the coast, which is chiefly an argillaceous deposit, supposed to be brought down by the great rivers. The latter formation has been found by Major Staples to extend to a very great depth, by boring at Georgetown. In a letter he wrote me he states, that at twelve and at fifty feet depth, he had found fresh water, decayed and semicarbonized *timber*, apparently *Courida* (*Avicennia nitida*). The Major very naturally concluded that this had been, in remote time, the bed of the Demerara river, and I of course supposed, that whether the bed of the river or that of the sea, it had gradually been filled in by the alluvial deposit of earthy materials brought down by the rivers, together with the *Courida* and drift-woods, precisely the same operation as we see constantly going on upon the Demerara coast; and I certainly had not the smallest conception of the ingenious and very novel mode adopted by my friend Mr. Hillhouse, of accounting for such phænomena by raising the surface of the Atlantic fifty feet above its former level *. If in physics we find it necessary at times to assume very vague and improbable hypotheses, it is not so in matters which we see fully explained and demonstrated by Nature herself under our daily observation. The natural interpretation was, that these ligneous matters had sunk in this situation when the sea occupied it; that the deposit of mud had, in the course of ages, thrown back the sea, instead of the ocean having risen above its former level: yet, possibly, the other conclusion may be right.

I had reason to know something of Major Staples's labours for the purpose of procuring fresh water at Georgetown, as the instrument with which he operated cost me between 50*l.* and 60*l.* sterling, as the books of M'Iuroy,

* See "Journal of the Royal Geographical Society," vol. iv. p. 36.

Parker and Co. would testify. The instrument was Ryan's patent borer: I obtained it from London; it was the first, and, for aught I know, the only one ever brought to the colony; but owing to other pursuits, I had only made some slight attempts at boring in Georgetown. Major Staples has the merit, after vast labour and perseverance, of effecting the important purpose of procuring fresh water on the saline coast and at the capital of these colonies.

Such, in fact, is the mutability of the coast, from alluvial deposits brought down by the rivers, that the mud-banks are continually shifting from one part to another; so that, up to our time, old Arowaks have been heard to discuss their tradition respecting the anterior non-existence of the whole peninsula of the Pomeroon.

The tides on this coast, in respect to height, times, and directions, are greatly influenced by the tropical currents, and the varied quantities of water brought down by the great rivers. I have observed, indeed, a series of changes on the Guiana coast, resulting from the tides; and necessarily so, having furnished the astronomical matter for the Demerara Almanack for a series of years, since 1805, the lowness of the land requiring an accurate anticipation of the highest tides*. In short, so different are the banks and soundings of this coast, that our hydrographical charts indicate most inaccurately its present state.

Climate and Diseases of the Country, with hints respecting their Prevention and Treatment.

Guiana is the most favourably situated of any part of

* Prior to that period, no Almanac had been calculated expressly for these colonies; and the most experienced planters have declared that the dams were then frequently broken by unexpected high tides, by which the crops had been ruined, and vast losses of property sustained on the plantations, and even in the capital, then called Stabrock.

America, or the world, perhaps, with respect to the winds and sea-breezes. It lies in the main track of the equinoctial currents; whilst hurricanes, so terrific and destructive amongst the West India islands, are unknown here, and the equinoctial gales are extremely steady and uniform throughout Guiana. At Angostura, three hundred miles inland, they commence not an hour later than on the sea-coast.

An opinion is very prevalent, that the heat of climate renders Europeans unable to labour, or encounter much fatigue in these countries. This is a great mistake; for, on the contrary, it is a fact that those who take most exercise enjoy the best health, provided they live temperately. It is the excessive use of strong liquors that proves deleterious to Europeans in hot climates, and which, together with the heat, renders them incompetent to sustain much fatigue, until they become accustomed to it. It is alleged, most erroneously, that strong liquors are necessary to counteract the debility arising from the heat. Except in great moderation, they have the contrary effect, and have ever been the chief cause of the mortality which formerly prevailed, and must ever prove dangerous to the habitual debauchee. The writer, although not the most temperate, can aver, that during an experience of twenty-five years in the warmer parts of South America, he ever enjoyed the best health when he used most exercise. In every part of the world, exercise and temperance are the greatest safeguards of health; but indolence is even more pernicious in hot climates than elsewhere.

The sackooru and casseri form the most wholesome, nutritive, and delicious drinks (made chiefly from mixtures of cassada, maize, and sweet potatoes slightly fermented). This kind of beverage might be substituted for malt and spirituous liquors with incalculable advantage. Those who

use this sort of drink, owing to its substantial and restorative properties, as we ourselves experienced, lose the desire for strong liquors. This fact, which we had previously heard reported, was confirmed amongst the Macoosies, who make constant use of such beverage: they as constantly showed a disgust for spirituous liquors, whilst the Arowaks, Warrows, and those of the coast, had an insatiable desire for them.

It is well known that many families in this country are affected with scrofula, and a strong predisposition to pulmonary consumption. To such families or individuals the climate of Guiana would be the most eligible of any in the world, as affording an exemption from such complaints. Tubercular consumption is unknown on the coast, and extremely rare in the mountain regions, though not unfrequent on the llanos. The writer can say, that he has never met with an instance of genuine tubercular phthisis on the coast of Guiana, nor a single case of calculus, or stone in the bladder generated there. Now this is not the case amongst the West India islands; and for this plain reason, that however favourable may be the sea-breeze in the day, there is every night a cool land-wind blowing from the central parts towards the sea. The yellow fever has long since disappeared, and the coast becomes annually more healthy and agreeable as the woods are cleared off.

Physicians often recommend to their consumptive patients a voyage to Montpellier, Naples, Rome, Madeira, &c.: had they a knowledge of the advantages offered by a Guiana climate, they would assuredly never think of sending patients to those places, all of which are far from being exempt from these disorders. This I consider a matter of immense importance to those so afflicted,—to families predisposed to consumption, or affected with scrofula, the se-

cret agent and origin of the most insidious and fatal diseases of this country*.

The climate, I may say, is not only prophylactic, but curative of this disorder (pulmonary consumption), of which I have known various instances: and one of the most remarkable and desperate cases occurred so long ago as 1806, in the harbour of Demerara, in the person of a Swede, who arrived in a vessel from Portsmouth. This case I have detailed in a more appropriate place.

In the interior parts of Guiana the purity of the air is such, that in the dry season the stars appear like brilliants in the deep azure sky at night, and we not unfrequently perceive planets in the day-time. I have often observed the planets Jupiter and Venus when the sun was 20 or 30 degrees above the horizon; in which case Venus appears through a telescope precisely like the moon in her first quarter†. At the same time, the splendour of the moon and the zodiacal light contribute to make the nights most pleasing, and to throw a charm on every object.

The testimony of the wood-cutters constantly assures us that wooded parts and inland forests are never found to be unhealthy to either Europeans or others. These are facts which I can vouch for; and to show they are not contrary to reason, let it be considered that it is not the absolute degree of temperature which determines the salubrity of any climate, but, as every one knows, it is the great and sudden changes from heat to cold, and from cold to heat, which chiefly render any country unhealthy. Now, there

* That these are not hasty conclusions of the writer, may be seen by referring to the *Lancet* of May 8th, 1830.

† This must ever be some distance on either side of the planet's superior conjunction with the sun, the reason of which will appear evident to astronomers.

is probably no country on the globe where the temperature is more uniform than in Guiana.

Instability of climate contributes more, perhaps, than any other cause to the production of epidemic diseases. The fatal Asiatic cholera, for instance, which has pervaded almost every part of the habitable globe, excepting Guiana, arose in that part of Asia which is subject to great changes of temperature,—at one time to the hot winds from sandy deserts, or the tropical seas,—at another, to the chilling blasts from the *Gauts*, or from the Himalaya mountains, the highest in the world, and covered with eternal snows. In further illustration of the subject, let us contrast the steady climate of Guiana with that of Canada, where enormous changes are often experienced, and consider that the population of Quebec was last year decimated by spasmodic cholera;—it is stated in the *Times* of March 6th, that *one tenth* of the inhabitants had fallen victims to this fatal scourge.

The yellow-fever, as before observed, has many years since totally disappeared on the coast of Guiana. In 1804 it prevailed with great mortality, chiefly amongst the sailors, who, in a state of intoxication, not unfrequently slept on the ground or on deck: they were mostly on the following day attacked with depression, dry skin, and the symptoms termed yellow fever, and in those days we actually knew of no means of averting the consequences.

It may not be irrelevant to add here a few directions to emigrants or others destined to tropical climates. From what I have observed in the islands, especially in Martinique and Grenada, I have reason to consider their climate as far less healthy than that of Guiana. Adynamical and malignant fevers are still very fatal amongst the islands. These fevers, however, may be easily arrested at the onset;—a fact, which, strange to say, is little known, and only

practised imperfectly by some few Creoles and native inhabitants: it consists in procuring a perspiration, with as little delay as possible after the fever is found to be approaching, by the use of vapour-baths and fomentations, warm sudorific drinks and enemata*; not waiting for depletion or purgatives, but employing them secondarily as required.

The common or European practice is to administer calomel and purgatives, antimony, &c.; occasionally to bleed, and apply blisters; but such measures are seldom or never known to arrest the disease. The method by sweating appears, indeed, by far the most rational, when we consider that these disorders are brought on chiefly by colds and suppressed perspiration, after heats, atmospheric vicissitudes, and intoxication: the pores of the skin becoming closed, the blood is driven inwardly upon the viscera, and becomes partially stagnant. The natural method, then, is most obviously as promptly as possible to open the obstructed pores, to drive the blood to the surface, and to promote the secretions by which the vital fluid is depurated, and on which all the functions of life most immediately depend. This should be speedily attended to before fatal lesions or inflammation become fixed on the vitals. When these indications are acted on at the commencement, they prove as efficacious as they are simple and obvious.

It is melancholy to observe, however, that the few precious moments are suffered to elapse, very often waiting for the medical adviser, the medicaments to be prepared, or some useless affair to be attended to, whilst the principal and essential point is not thought of. By the Spaniards,

* I have known old sailors use a method of their own with great success, that of taking very plentiful draughts of hot punch, a very powerful sudorific; and thus preserve themselves and their comrades on the invasion of yellow-fever.

too, a trifling preliminary course of antiphlogistics are employed, (*para refrescare.*) This course, however, I consider as less hurtful than that of giving strong purgatives at the beginning; for by the latter, the natural effort or elimination by the skin is counteracted,—as purgatives tend to impede the secretions by the skin, and thus to retain any irritative acrimony: hence we may see good reasons (though not now recognised) why Hippocrates and the wisest of the ancients forbade the use of cathartics at the beginning of fevers or inflammations,—which are one and identical, differing only in degree and the nature of the parts primarily affected. It should be observed, too, that a dry skin is a constant symptom attendant on the commencement of all the pernicious fevers and dysenteries in the tropics, and doubtless in every climate; whilst the malignant fevers, like cholera, are not unfrequently ushered in with looseness of the bowels: this should afford a hint to the followers of the cathartic plan. The same means in effect are resorted to with equal success against the dangerous fevers, dysenteries, &c. by the aborigines of North America, that of *vapour-baths*, along with the copious use of alexipharmic tisans, or infusions of sudorific herbs; and this is the proper way of arresting typhus and all malignant fevers and dysenteries*. This supposes that we take the fever at the onset, as ever should be done if possible: and the same, followed up at later periods, together with bleeding and evacuants, and the use of stimulant frictions, as the case may require.

The transpiration is copious in hot countries; indeed, it

* To this end Nature offers us a multitude of plants in every country: amongst the most valuable here are sage, balm, hyssop, menthæ, agrimony; and they are most efficient when combined or infused together, and drunk warm in bed. Rheumatism, as well as dysentery, typhus, &c., are thus readily conquered.

forms the best index to the state of health; and those who know this, are enabled to guard against the more common cause of disease in hot countries, suppressed perspiration*. Unfortunately, however, very few are aware of this fact, and are fearful of using exercise, in the heat of the day especially, and they allow the mainspring of health to flag, the secretions to be suppressed; they become pale and debilitated, and obnoxious to fever. They resort to purgatives,—salts, jalap, and calomel. The latter is found the more useful, (and that in repeated small doses,) because it tends to restore the secretions, but is feeble and insufficient, unless assisted in its action by sudorific baths and diluting drinks. The true remedial means are generally disregarded,—the cathartic system being mostly mistaken for it.

By the Dutch physicians in the colonies, diseases were mostly ascribed to the bile and *slime*. In Europe we have the more elegant and euphonious designation, *affections of the gastric and chylo-poietic organs*, both, however, implying the same aperitive indications, directed against the supposed offending humours, scybali, &c., in the alimentary canal.

The necessity of preserving the perspiration is more evident in warm climates than in cold; for, in the latter, the

* Many mariners have learnt this by long experience: I have just conversed with one who is very intelligent and worthy of confidence, (Mr. R. Featherstone of Wiveliscombe,) who has made sixteen voyages to the West Indies and Demerara, twelve in the capacity of carpenter, and four as chief mate. He drinks with moderation, uses much exercise, and perspires very freely in the warm climates: although of a full habit, he has never been attacked with fever within the tropics, but enjoys the best health, and observes, that he usually grows stouter whilst there, and especially at Demerara. This I have noticed, because it tends to exemplify and confirm my own views and experience. Mr. Featherstone is now about to sail for America, and on his return will be ready to answer any further interrogatories. But many old and experienced masters of vessels will be found to bear similar testimony.

insensible perspiration is usually sufficient for the preservation of health: but even here it has not escaped the notice of the wisest physicians, that the cutaneous discharge is the most immediately essential to life, and to the due regulation of the healthy functions: in short, we are taught by daily observation in every country, that by far the greater number of all our ailments arise from colds and suppressed perspiration; and it appears to me very surprising that a matter of such vital importance should be so lightly regarded*.

I have long been of opinion that the exemption from phthisis on the coast of Guiana is partly owing to the gaseous emanations from the soil; but I have reason to believe that the main cause is referable to the free perspiration experienced here, together with the almost total absence of those chilling blasts which are common in other tropical regions. And the means which are found most efficient in the cure of this distemper confirm me in this opinion; that is, by the use of diaphoretic, alterative remedies, such especially as the composition of sarsa, bark of guaiacum, waik-root, &c., together with small doses of mercury, antimony, opium, and the use of vapour-baths,—

* The vapour-bath affords one of the most effectual means of opening the pores of the skin and readily averting the evils which most commonly assail us. Many ingenious contrivances for this purpose have been offered to the public, and no family ought to be without one of them; but, to persons on ship-board, or those going out to hot, to cold, or any other climate, they are truly the most essential and invaluable safeguards. I have examined many of them, and do not hesitate to say that the most portable and convenient for the application of vapour, hot air, and for any fumigations, is one invented by Professor Dewhurst. This simple apparatus I have found so exceedingly advantageous and beneficial in my own family, that nothing could induce me to dispense with its use. They are put up with familiar directions, and sold, I am informed, by Mr. Francis, Park-street.

means which most steadily promote transpiration, urine, and all the secretions, which eliminate the causes of disease from the habit and purify the blood. Divers instances of the cure of siphilis, cachexies (foul disorders), and even confirmed consumption, at Angostura and the missions, seem to me fully to justify this conclusion (see *Med. Bot. Trans.*; and the *Lancet*, 1829, and 30-32.; *Med. and Surg. Journal*, vol. iii. and v.)

On this point I may further remark, that numberless disorders may be, at their commencement especially, most speedily removed by the means here indicated; and the *rationale*, or reasons for which, will appear sufficiently evident to those who are aware that most of our ailments, in every climate, arise from colds and suppressed perspiration, together or coincident with a morbid state of the fluids.

When matter from extensive ulceration and abscess (as in the lungs) has not a free discharge, it becomes absorbed into the mass of circulating fluids, and produces an irritative fever, termed hectic. By repose, and warmth of the bed at night, the patient sweats, by which the fever abates. The sweating is an effort of nature to relieve the system of the offending humour; which is evident from this, that if we collect the clammy transudation, we find it to possess most of the properties of pus. This view of the subject, however, is disregarded; and so perverse is our pathology, that, instead of assisting, practitioners seek to suppress the salutary discharge, whilst, in general, they appear to entertain no idea of the means of altering the habit, healing the ulcers, and supporting the strength and vital powers. The means above noticed have been found most efficient in healing ulcers in all parts of the body, internal or external.

Views like the foregoing, however, which are chiefly built on the experience of ages, have long since been exploded as antiquated, and with the explosion, common sense has

been driven from the field: no pathology is now recognised besides the unmeaning and senseless mummerly about *irritation, sympathy, brain affection, thoracic affection, abdominal affection, increased action, disposition to inflame, &c.*, as though the different parts of the body were endowed with volition, and, without assignable cause, with the power of taking on any mischievous action at will. (See Appendix.)

Proposals for Colonization, with Notices of the Indians, and an Allusion to some Errors of the Baron Humboldt.

Guiana, I may observe, is watered by innumerable rivers; but the great highways to the interior, from the British settlements, are mainly by the Essequibo, Demerara, and Berbice. These afford the greatest facilities for navigation with large schooners or steam-boats to the distance of from fifty to eighty miles inland; that is, to the first ridge of land (at the falls or rapids of these rivers), which forms, as it were, a wall or parapet to the more elevated lands, extending to the Cordillera of Parime and Macoosy mountains. At these falls, the primitive soil commences, although there are fertile lands below this ridge*. The banks between the series of the rapids are very high, consisting of pure clay, as white as snow. A fruitful soil is the grand object for colonization. It would be but a waste of words to speak of mines, in a country which has never been explored, although the *naked hills* of the savannah coun-

* All this part abounds with excellent timber for houses and ship-building, especially the bania, or iron-wood, so called, green heart (*Chloroxylon*) and sirubally (*Laurineæ*), the yaki-pot (*Leocythis ollaria*), and hitehia, which is identified in the *Malpighia altissima* of Aublet, according to Mr. Bach, a gentleman well known in the colonies as a most ingenious and intelligent botanist. Here, too, are multitudes of woods suitable for dyeing, for cabinet-work, and various uses in the arts, as well as gums, resins, barks, roots, and divers medicinal substances of the greatest value, and totally unknown to Europe. For a notice of timber-trees, see Appendix.

try, with red ferruginous earths and quartzose pebbles, are similar to those of the gold and diamond districts of Brazil.

The Essequibo rises in the south-west part of Guiana, and after traversing a salubrious portion of this extended country, falls into the sea in lat. 7 degrees north. The fertile banks of this river and its tributary streams are covered with the richest vegetation, with the finest timber for ship-building and cabinet-work, with a multitude of plants bearing delicious fruits and alimentary substances; yet, for the most part, this country is destitute of inhabitants: in fact, the choicest tracks of this secluded territory remain in a state of nature, untrodden by man, either savage or civilized; and what is stated here of British Guiana is mostly applicable to other parts of this extensive country.

The course of the lower Essequibo lies nearly in the direction of the longitude; but, on passing the mountain Taquarie (so called, from a huge pile of rocks in form of a water-jar, latitude $4^{\circ} 50'$), we find its course, upwards, bending a long way to the eastward, and that just at the part where, on the more recent maps, it is carried far in the contrary direction, westward. From this error, the confluence of the Essequibo and Reponony is laid down about eighty miles to the westward of its true position.

In going up the Essequibo, we have to encounter three series of rapids, occasioned by rocky dykes. It is these ledges alone which can offer any plausible objection to the inland settlements. The highest falls, however, which I saw in the course of this river, did not exceed twelve or fifteen feet. It must be observed, too, that these falls or cataracts exist, as such, only in the dry season, when the river is low; for, in the wet season, the river rises so high that the falls are totally obliterated, or lost in the flood. We passed up in the former season and returned in the latter, and, keeping the main channel, ran down the falls without

having occasion to stop for a moment*. This period of the year would of course afford every facility for shipping produce, even without any improvement of the navigation of the river, or regard to what I have now to add. Even in the dry season we were always able to avoid the falls, by taking some of the numerous lateral channels, called Ittabas; and nothing is more certain than that the numerous gentle streams of black and deep water†, which fall into the main river, would greatly facilitate the intermediate communication.

As to the craft to be employed, the coreals and canoes afford at present the most convenient and rapid conveyance, as passage-boats; and they are managed by the natives and coloured people of Essequibo with great dexterity. The natural passes, however, which I have alluded to, might be rendered safe and easy, especially for flat-bottomed boats, such as are used on the Mississippi and other rivers of the northern continent. The falls, then, cannot be regarded as

* In 1810, by an appointment of the Colonial Government, I accompanied an expedition amongst the interior tribes and to the Portuguese territory. We went up in November, and returned in July following. On our return, I laid before Government a chart of the river and the country which we traversed, with a brief description of the same, which has, I observe, been employed by some late writers, without any reference to authorities: but this is of no importance.

† These black waters traverse a deep and fertile mould, and evidently owe their colour to carbonaceous or decayed vegetable matter. The water of the western branch of the Essequibo (Reponony), which runs through a savannah country, is of a light colour; that of the southern branch, or Essequibo proper, appears almost black, which shows that it traverses a rich soil of decayed vegetable mould. This distinction I have found to obtain universally, and to furnish the most certain indication of the nature of the soil in Guiana. The Caroonny, which rises amongst the Parime mountains, flowing northward to the Orinoco, appears of a jet black; yet in a glass tumbler it is as clear as crystal. The Spaniards say it runs through beds of sarsaparilla; and it is, therefore, regarded by some as highly medicinal!

material impediments to objects so important ; both because they are actually obliterated in the wet season, and because they may at all times be avoided by means of the lateral channels. The Indians and coloured people go a long way up this river every year, in the dry season, for turtle and fish, which they dry upon the great rocks at the magnificent amphitheatre of falls of Quasinky and Warapota. They also cut timber, which is floated down when the river is high, and this accounts for their dexterity amongst the rapids.

Were the natural avenues of Guiana, however, far less than they are, we could, in such a country, have nothing to fear, especially since the vast development of modern science in the construction of canals, roads, and rail-ways ; and when we recollect that, in North America, even the Alleghany mountains are not regarded as obstacles to genius and labour in such constructions, we cannot despair of British genius in the South.

The traveller in this temperate region has no cold or excessive heat to dread : his house for the night is built by the Indians in a few minutes ; that is to say, a shed, covered with two or three leaves of the trooly or other palm, which is sufficient in a mild climate never invaded by hurricanes.

Doubtless, many of the enlightened planters and merchants are sensible of the importance of the cultivation of the interior, and would come forward to furnish the means of internal communication, by roads and canals, and open the navigation of the river Essequibo by means of steam-boats, &c.

For the commencement, it might be most eligible to form a settlement at or near the first falls of the Essequibo, or Demerara, sixty or seventy miles up the river, where an excellent soil will be found for raising Indian corn, rice, millet, plantains, yams, sweet potatoes, cassada, eddoes, and

various culinary plants, of which an abundant supply would soon be obtained. In the mean time, the planting of tobacco, coffee, cocoa, cotton, and sugar may be commenced, as also grapes, figs, dates, &c., as desired.

A position established here would afford the best facilities for cutting a road past the falls, or for rendering these navigable for boats and steam-vessels. In the mean time, surveys should be made for eligible spots for cultivation, and for extending the settlement further inland.

An object of the utmost importance at all times, but imperative and indispensable in the present state of things, is the introduction of agricultural machinery and cattle labour: it is strange, indeed, that this should have been so little thought of in the colonies of Guiana. It must be observed, however, in justice to one ingenious and philanthropic individual (Mr. Josiah Booker*), that the facility of employing that noble instrument, the plough—that source of wealth and national prosperity—has been most successfully demonstrated on the east coast of Demerara: and it must, no doubt, be equally so in every part of the colonies.

If anything can keep up the coast cultivation in Guiana, it will be the use of the plough. The writer was not aware of the above fact or of the complete success of the experiment by the gentleman just named, till lately; and he confesses it modifies very much the opinion he had entertained on the practicability of continuing the cultivation on the Guiana coast, especially on the west coast, for the east is partly worn out by a long succession of crops. The same means of culture, however, (by employment of oxen,) would also tend to revive the fertility of an exhausted soil. The plough, indeed, would afford immense advantages on the

* Firm of George Booker and Co., Liverpool.

coast or the interior, although, perhaps, less essential in the latter, because of the mellowness of the soil.

The emigrants might be composed of the surplus population of this, or any other country desirous of availing themselves of this new and inviting asylum, offering, as it does, by its productiveness and natural capabilities, more scope for industry than any other part of the American continent. It would withal afford a full and profitable employment to ship and house carpenters, coopers, painters, glaziers, cabinetmakers, blacksmiths, brickmakers, and bricklayers. Most of the bricks used here are brought from England, whilst this country abounds with the finest clay in the world, and which, from its whiteness and purity in the upper rivers, is mistaken for chalk. It would doubtless form, with the white sands or quartz crystals, the finest of porcelain.

It is true that wages, or the price of labour, may not be so high in Guiana as in Canada or Van Diemen's Land; but this is more than compensated by the cheapness of provisions and all the necessities of life: it should be considered, that these ever regulate the price of labour in all countries, and it is often asserted that the low price of labour indicates an abundance of provisions.

Many of the emigrants would doubtless prefer taking up their residence on the sugar estates of the coast; and those of sober habits might here render themselves highly useful, not only by their own labour, but more especially as affording examples of industry to the black people, who, for want of such examples, entertain an idea that field labour is degrading and inconsistent with freedom. This point I should consider as worthy of special attention, if it be intended to keep up or prolong the present cultivation of the colonies*.

* This is a matter, I presume, now very generally understood and acknowledged; especially so, I am told, by Messrs. Rose, Croal, Bean, Dr. Bell, and many of the more enlightened and liberal minded planters, merchants, and others, connected with the colonies.

As to any protecting force, the same which now exists might, with a small addition, be thought advisable. But the great secret of defence for such a colony is, to maintain a good understanding with the natives, and to treat them as *men*. They are, in general, docile, tractable, and easily governed; and Europeans, indeed, have but too often taken undue advantage of their good nature. They would render every requisite assistance to the new settlers in clearing the lands, fishing, and hunting*.

Why, moreover, should these people, because they disregard money, be considered unworthy of wholesome instruction, or of the lights of Revelation, which have never been offered them except by the pious Catholic missionaries? It would be worthy the liberal policy of this great nation, to shed the lustre of the Gospel and of civilization upon those benighted people, who, in a country ranked by nature amongst the richest on earth, are rendered absolutely miserable by the grossest delusions, and by idolatry the most abominable; believing themselves ever under the dominion of the devil, or haunted by the Kanaima,—demons, poisoners, or night murderers, whose malignant power they invoke or seek to evade by incantations and exorcisms†, through the pretended acts of impostors,—priest physicians, called Peis or Piaches. Such is the case, more especially with the Ackawai and Macoosy tribes; but it is common to all those of the interior, if we except the Caribees.

The southern aborigines of America have not shown those savage traits of ferocity which have marked the more northern. They partake more of the dispositions of the

* See Hillhouse's "Indian Notices" for much correct information on these subjects.

† To express the Great Spirit, or God, they use the term Mackanaima, that is to say, the Father or Master of Kanaima. The Caribees, Arowaks, and the Indians in general acknowledge indeed a Supreme Being, but they say he never troubles himself with the affairs of men.

Hindoos or the Chinese, whom they accurately resemble. We hear nothing of human sacrifices, like those of the ancient heathens, and as still practised amongst the South Sea Islanders and the savage hordes of Africa.

It must, indeed, (as before remarked,) be an object gratifying to every liberal mind to see the natives instructed in useful pursuits, and brought into moral and industrious habits. Heretofore this has had no proper attention from the Government; but, strange to say, their natural disposition for strong liquors has been encouraged, and multitudes have been destroyed by the deleterious *new rum* so liberally placed at the disposal of the post-holders and *protectors of Indians*, so termed. Through a system totally different, the most happy results are realized amongst the Portuguese Indians, as we long ago observed, on the Branco*; and by the Spanish Indians, as may be seen in those refugees who fled from the revolutionary troubles in the Orinoco, sought protection under the British Government, and settled in Pomeroon and Moruca. These people we find to be intelligent, peaceable, industrious, contented, and happy, and in their moral conduct not excelled by any other caste or nation on earth. It is rare, indeed, that any acts of aggression are committed by them.

The primitive Indians of this part mostly subsist on fish and crabs, in the capture of which they are as dexterous, perhaps, as were ever the Ichthyophagi of the ancient continent; and the influence which habit or mode of life has upon physical conformation is exemplified in the broad, spreading foot of the Warrow, which, like the *pedes palmati* of aquatic birds, enables him to walk on the muddy shores, where he finds his accustomed aliment. In case of scarcity of fish, they content themselves with the zurumo,

* Expedition to Interior Guiana in 1810-11.

or sago bread made from the pith and fruit of the Eta palm, which grows in the swamps of the coast. Their language is as simple as their mode of living, and contains but a very small number of words.

The Macoosies are a numerous tribe, and more inclined to industry than most others: they would contribute vastly to the aid of the colonists; whilst, by a little instruction, some sad traits in their character would be corrected, especially that of selling their relatives to the trading Caribees. It is customary for a man thus to dispose of the children and even the wife of his deceased brother. An active Macoosy boy, apparently 10 or 12 years of age, was offered to the author for a fowling-piece and a few minor articles. The offer was not accepted, because one of the objects of our mission was the suppression of this traffic. A clandestine trade of this sort is still carried on by a certain class of persons who reside up the rivers.

The assistance of the Warrow Indians (Guaraunos of the Spaniards) would likewise be important. They inhabit the coast between the Rio Moroka, or Pomeroun, and the Orinoko. These people are great fishermen, and they fabricate most of the canoes and coreals used in Guiana. The famed Spanish launches are made by them. The Warrows were employed with great advantage in the military works of Post Moroka, upwards of twenty years ago, when the writer had the medical charge of the troops stationed at this fort. Vast labour was here bestowed by Government to maintain this marshy spot and the fort against the encroachment of the sea, by which, however, it was subsequently entirely demolished. These are the Indians who are fabled to live on trees, in the language of a learned modern traveller, whose comprehensive mind engrosses a vast number of objects—at times beyond the scene of his observation. He mentions them as “*nestling amongst the*

tops of the Mauritia palm trees"—a statement too absurd to need contradiction.

But this is unworthy of notice compared with his directions for the important and dangerous navigation of the Orinoko, between Angostura and the sea (300 miles), although never visited by him; but understood by the reader to be from his own observation, and which unfortunate description has led to many fatal errors.—See Remarks on the Derotero de Madrid, &c., in *Gaz. de Angostura*, 1819. Errors like these, emanating from such high authority as that of the Baron de Humboldt, are doubly pernicious, and demand here a notice; and I must inform the reader what he has neglected to do,—that he never went below Angostura, and consequently could not have witnessed any part of this dangerous navigation of the Orinoko, which he describes with such extreme minuteness. Readers usually take it for granted that the reports of travellers are founded on their own observation; and when not so, it ought in all fairness to be intimated, at least in matters of any moment. What this illustrious traveller has himself observed, however, he describes with great fidelity.

This is an omission, whether of the author or his translator, which must not be concealed from the public. There are many instances I could point out, in which he has evidently reposed too much confidence in the reports of other travellers, of pilots, and the stories of the *Savaneros*, who are excessively fond of entertaining strangers with marvellous tales; as, for instance, in the frightful roarings of great serpents and crocodiles in their annual resurrections from their summer repose below the dried mud. These wonders have been copied and set forth as undoubted facts in all the periodicals, encyclopædias, and cabinet libraries throughout Europe and America*; and that perhaps with-

* See the Edinb. Review for 1810.

out a single contradiction, the authority being regarded as infallible. Thus the errors of great men are infinitely disseminated, and exceedingly prejudicial to the progress of truth and science. But the learned Baron, no doubt forming his opinions of others by his own love of truth, and finding it impossible, in a hasty sojourn, to give a due investigation to the multitude of objects embraced by his gigantic mind, was often compelled to take information as presented to him, and he is less to be censured than his obsequious admirers, who hesitate not to repose a blind confidence in all he writes. I am aware that certain fishes will, in a dry season, bury themselves as the water disappears, and in this situation they have been often dug up alive from below the dried mud on the coast of Guiana. But the crocodiles, the *Camudi*, or great water serpents, (and even certain fishes,) depart overland and seek other waters: they are seen more frequently in the dry season, and for the obvious reason, that there is less water to conceal them: and as to the *frightful roarings*, I have seen hundreds of crocodiles, and been in the near vicinity of thousands, but never heard a voice uttered by any one, excepting a short gulping noise at night, like *boq-boq*, which, the natives say, is a call to their mates. I am aware that Linnæus and some other authors speak of the roaring of the crocodiles of the Nile, but I consider this amongst the delusions of great naturalists; and I must confess myself equally incredulous in respect to the sonorous power and roaring of great snakes.

Extracts from various Authors in confirmation of the preceding Views.

I may now take a few extracts from some of the more authentic travels in Guiana respecting the natural productions and eligibility for colonization, and which I have the great-

est satisfaction in referring to as confirming my views in the preceding pages.

M. Humboldt, who visited the western part of Guiana by the Orinoko, observes: "I saw vessels arrive on the coasts of Terra Firma laden with the fruit of the *Caryocar tomentosum*, *Pekea tuberculosa* of Aublet. These trees reach 100 feet in height, and display, by the beauty of their corolla and the multitude of their stamens, a magnificent appearance. I should tire the reader by continuing the enumeration of the vegetable wonders which these vast forests contain."

Of the cacao, or chocolate nut, he says: "The landing-place of Pimichin is surrounded by a vast plantation of cacao trees, which are very vigorous, and loaded with flowers and fruit at all seasons of the year. The light lands of the Taumini and Pimichin are extremely productive. When we reflect that the cacao tree is a native of these forests of the Parime, south of six degrees of north latitude, and that the humid climate of the upper Orinoco far better suits this valuable tree than the air of the provinces of Caraccas and Barcelona, which becomes every year drier, we saw with regret this fine part of the globe in the hands of monks, who encourage no kind of cultivation. The mission of the Observantins alone could furnish annually for exportation fifty thousand *fanegas* of cacao, the value of which, in Europe, would amount to more than six millions of francs." (Personal Narrative, vol. v. p. 282.) He also exclaims, (vol. iv. p. 567,) "Strange policy that, which teaches mother-countries to leave those regions uncultivated where Nature has deposited all the germs of fertility."

The Jesuit missionary M. Grillet, who long ago travelled and resided in the interior parts of Guiana, makes the following remarks: "Guiana is a great country, and extends, in latitude, from the equinoctial line to the tenth

(ninth) degree on the side of the arctic pole, from the river of the *Amazons* to the *Orinoko*, which contains near 400 leagues on the sea-coasts, with an immense stretch into the countries that border upon Brazil on the south, and New Andalusia on the west. This part of the continent is watered with abundance of rivers, some of which will carry great vessels up a considerable way beyond their mouths. The Indians bring up all sorts of tame fowl as well as wild, and other game, which is there in great plenty, as also abundance of both sea and freshwater fish. They load ships with a certain fish they catch in the rivers with a sort of harpoon: these are carried to the islands; and one may say, this and the sea-tortoise are the cod-fish of the continent and the *Antego* Islands.

“ Their *Rocou* is a red dye, and valuable when it is natural, such as the Indians sell us before it has been falsified by foreigners, who carry it into Europe. There are likewise to be had amongst them divers species of gums, woods, and roots, proper for physic, which are good commodities in France; as well as several sorts of wood for dyeing, and for the making of cabinets and inlaid works, amongst which is the letter-wood called by the French, *bois de la chine*, and which grows in no other place in the world but on this part of the continent. The natives cut and sell it in great burthens to the ships, so that a hundredweight of it comes to but a crown; whereas that quantity was a long time sold for 100 crowns, and never for less than 150 livres. I omit a great many other things which this country produces; and one may say, this large compass of ground has moreover this advantage over the islands of America, that there is no fear of tiring it. The island of St. Christopher, where the land is become almost barren by being overburdened with successive crops, yet does not hinder them from raising every year a prodigious quantity of sugar, besides ginger,

indigo, cassia, and other commodities that are cultivated there.

“ This country of Guiana is diversified with hills, plains, and meadows. The land is everywhere so fertile that one man may easily get, with his own hands, a livelihood for twenty people, the cultivation of it is so very easy. The fruits of it are excellent and very plentiful; various sorts of corn grow there all the year round, without distinction of seasons, and that in a very little time: and there being no winter, the trees are alternately covered with blossoms and fruit, and always with leaves. The air is very good, and the climate very temperate, though it be between the tropics, for the heat is continually mitigated by a fresh east wind, which blows all the year, except in the night, when the breezes come from the land. The waters are excellent, and keep good throughout the longest voyages, as has been often experienced in Europe.”

The Jesuit missionary Christopher D’Acugna, in his “*Discovery of the River of Amazons*,” concludes, “ Thus, in short, I have given a relation of an ample discovery of this great river, which though it possesses so great treasures, yet excludes no nation in the world from them; but, on the contrary, invites all sorts of people to reap the profits of the riches with which it so abounds. It offers to the poor a plentiful maintenance; to the labourer, the liberal recompense of his toil; to the merchant, a profitable trade; to the rich, an improvement of their wealth; to gentlemen, honourable employments,” &c.

It is evident that M. Buffon had acquired a very correct idea of the Guiana climate, on which he makes the following just remark in his *Natural History*. “ In the new continent, the temperature of the different climates is more uniform than in the old. For this there are several causes: the torrid zone in America is by no means so

hot as in Africa. The east wind, which blows constantly between the tropics, does not reach Brazil, the land of the Amazons, or Guiana, without traversing a vast sea, by which it acquires a degree of coolness. It is for this reason, together with the rivers and forests, that these parts of South America are so exceedingly temperate."

Malte Brun, in his *Geography* (on Guiana), vol.v. p.555, says: "The cacao tree grows spontaneously on the east of the Oyapok*; coffee, pepper, indigo, and vanilla are indigenous to the soil; manioc and cassada are considered the best alimentary plants; the potatoe, the igname, two kinds of millet, and the tayove are also very nutritive.

"Guiana is famed for its medicinal plants. It supplies Europe with quassia, or the wood of Surinam. The *Dolichos pruriens*, the *Palma Christi*, a species of ipecacuanha, gentian, the *Arabicus costus*, the *copaifera balsam*, and many others are mentioned in the memoirs of Bajon and

* I know that by the English, Dutch, and all the European colonists, this tree is said to grow wild in divers parts of Guiana; and the same is asserted by Aublet, by Humboldt, Richard, and others. I cannot deny the fact, but doubt somewhat, having never met with it in the distant forests; and I know that it is often confounded with the *Cana-heri* (*Pacheri aquatica* of Aublet, *Carolinea princeps* of Willd.), which is called *wild chocolate* by the colonists. The fruit of this superb vegetable resembles that of cacao very accurately, and it has been employed in the same manner: in its large and beautiful flowers, however, it differs exceedingly from *Theobroma cacao*. What tends to increase my doubts as to the indigenous growth of this tree in Guiana is, that all the natives, so far as I know, call it by the Spanish name, *cacao*, derived from the Mexican (?), and they appear to have no name of their own for it. But, whether natural or not, the soil of the mountain regions is so congenial, it suffices to set the plants in the ground, when they will maintain themselves and reproduce abundantly, as I have witnessed in the missions of Carony.

The flora of Demerara has been but slightly investigated, with the exception of Meyer's contributions, and those of that philosophical botanist Dr. Hooker,—aided by the laudable zeal and intelligence of his worthy pupil Mr. Charles Parker of Liverpool.

Aublet. Leblond, a celebrated traveller and botanist, tells us that the cinchona does not grow in Guiana: as this plant has generally been observed in mountainous districts, the low plains on the confines may be unfavourable to its growth."

This may be a just remark; but the mountainous regions of Guiana have never been explored, nor even ascended by any one except the writer, so far as he knows, and it would so appear from the statement at page 552, that "the highest mountains are not more than 1800 feet above the level of the sea," whereas the mountain Mackerapan, on the Essequibo, has nearly thrice this elevation.

The Hon. P. H. de Groot, one of the oldest and most respectable inhabitants of Essequibo, and formerly president of the colonial legislature, who has been many times up the river (into the region proposed for colonizing) has uniformly declared it to be one of the most interesting and fertile countries on the globe, and the most desirable for occupation.

I may remark, too, that an enlightened friend* who has travelled so far as the Parime, many years since mentioned to me the intermediate or mountainous region in the very pleasing and classical terms for which he so much excels.

Piso, speaking of Guiana, observes: "*Multæ insuper plantæ, resinæ, et ligna, tam mercatura quam medicina dicata, luxuriant, quorum præcipua, enumerasse sufficiet. Denique fluviatiles pisces tam multi et tam præstantes apparent (licet à nostratibus multum diversi) ut vix ulla, regio in terris magis illis abundare possit.*"—p. 170.

We have, indeed, similar reports from all the more intelligent persons who have travelled in Guiana, respecting

* Charles Waterton, Esq., author of "Wanderings in Guiana."

the soil and productions of the Interior; and more recently Mr. Hilhouse, after having twice or thrice visited the region of the falls, adduces, amongst others, the following very strong arguments in favour of the inland cultivation.

“The climate of the region inhabited by the Indians is much more salubrious than that of the coast: though approaching nearer to the Line, its superior elevation causes a decrease of temperature, and the surface of the earth is always kept cool from the thick shade of the forest with which it is universally covered.

“It is a common observation that the air of the rivers is unhealthy; but this only applies to that part of them which runs through the swamp land and level of the sea-coast: here the exhalations and vapours accumulate, and the sea-breeze is not sufficiently constant or powerful to dissipate them. Throughout the whole extent of the salt or brackish water, fever and ague predominate; but beyond the influx of the tide*, the banks of the rivers are so proverbially healthy, that, were the population ten times more numerous than it is, there would be little employment for a physician. As we approach the high sandhills of the Interior, the natural drainage is so perfect, and the torrent of fresh water supplied by the creeks forms so strong a current, that all impurities are quickly drained from the valleys, and the surplus water is instantly absorbed by the sands. Behind the pegass lands (near the coast) come *high ridges* of sand, interspersed with valleys, in which is a slight admixture of clay. These *sand-reefs* present many fertile spots.

“To the south of this belt the rocky region commences, consisting of elevated ridges and detached conical hills, resting on bases of sand, stone, granite, and siliceous crystals,

* This extends to the falls.

containing a great variety of ochres, iron ores, mica, crystals, indications of the precious metals, &c. The rocky region is possessed by the Ackaways and Caribisce, interspersed with small settlements of Macusi and Paramuna.

“From this topographical review it is plain that the coast lands are as much the province of slave labour as the hills of the Interior for colonization by free colonists.

“The only land that can be devoted to this purpose is occupied by the Arowaks and Ackaways, who occupy the country between the rapids and high mountains of the Interior. This cannot be taken possession of, according to the old Dutch plan, without exterminating the Indians. But as we are bound to suppose that the British Government would not knowingly commit such an act of cruelty and injustice, it follows that the benefits of colonization should be extended to the Indians in return for the occupation of their lands.

“By the evidence of the old Dutch proprietors, the upper rivers were the regions in most general cultivation; and it is a fact that the first settlements and old Dutch estates were established and principally worked by the labour of the Indians. The exportable produce of that period certainly bears no proportion to the amount now shipped; but it was infinitely superior when compared with the small extent of capital employed. In fact, the old settlers had no capital. They sat down in the centre of the Indian population, attracted by the airy site of the hills, the abundance of fish and pure water, and the quantities of game. Their cultivation was carried on, either by free Indians or Indian slaves.”

At p. 71 of his “Indian Notices” Mr. Hilhouse further alludes to the probable advantages resulting from the colonization and cultivation of the Interior, and adds, that “the increased supply of animal food would add to the com-

forts of the whole population, whilst it diminished the expenses of the garrison; and Demerara would become the great cattle market for all the West India Islands.

“Upon the whole,” concludes Mr. H., “there is no doubt that, if the hand of cultivation reached to the hills of the Interior, and a few artificial improvements were added to the advantages of local situation, the climate of the Indians would be the most healthy and agreeable of any within the tropics; with fish, flesh, fowl, and vegetables in abundance, pure water, no fevers, and no mosquitoes.” (See the “Indian Notices”—Demerara, 1825 *.)

These observations of Mr. Hillhouse are strictly correct; and had his “Indian Notices” been at hand, I should have quoted him in a former hasty essay on this subject, but the book which he so kindly presented me in Demerara was lent out, and in fact lost till lately; and this must be my apology for having apparently slighted the valuable testimony of his experience.

I must not omit, however, to notice one small mistake of my friend in placing the head of the river Masserony in the geographical position of the Portuguese fort of St. Joaquim on the Rio Branco; and I may remind him that the Worariquera and Branco run here fifty or sixty leagues in the opposite course, upon the southern slopes towards the Rio Negro and the Amazon; but this was out of the limits of his tour, and we must occasionally allow a *degree* of *latitude*, or even degrees, for errors in reckoning. He will, of course, take this in good part, as it is intended; for, to conceal or defend glaring errors in our friends, is to prove ourselves false friends, and enemies to truth. I am not

* See also the “History of the British Colonies, by R. Montgomery Martin, Esq.,” vol. ii., in which will be found the fullest and most authentic details respecting Guiana and the West India Islands.

unaware that Mr. Hilhouse “with all his might” opposed my proposition for colonizing Guiana; but I persuade myself, after noticing the above extracts, that he could not have been in earnest; and although he were, no harm was done or intended, I presume; on the contrary, I am disposed to regard it as an honour to have obtained some attention from men of talent.

I may here subjoin a few words from a report presented to the Governor on my return from the Interior in 1811, some part of which was read before the Royal Geographical Society by the learned and able secretary, Capt. Machonochie: it will serve to show that my present views have not been hastily adopted.

On proceeding up the Essequibo, we meet with three great chains of cataracts or rapids: the first chain commences at Aretaka (20 leagues from the mouth of the river). The bed of the river, in the dry season, discovers vast quantities of vitrified, stony, and various mineral substances, and appears to have been the seat of volcanic fires at remote periods of time. These volcanic products are chiefly met with among the falls, incumbent on beds of granite, where the soil and lighter materials have been washed away. The principal component parts of the interior mountains are granite and its various modifications, which show them to be of primitive formation, whilst the extensive ranges towards the coast are of a less elevation, and are chiefly composed of indurated clays with sand and gravel, and may hence be regarded as belonging to the secondary order.

The soil of the interior and mountainous parts of Guiana consists of a strong and fertile loam, being a due mixture of clay, sand, and vegetable mould, with little calcareous earth; it contains much ferruginous matter, which gives it a yellow or reddish tinge; and, contrary to what has been

asserted of countries within the torrid zone, there are evidently vast quantities of iron ore amongst the mountains of Guiana.

The Indians (besides some cotton and sugar-canes which thrive without care,) cultivate cassada, maize, plantains, yams, eddoes, sweet potatoes, &c. Notwithstanding the diversity of the animal kind, with which their rivers and forests abound, they subsist mostly on the produce of their fields, which are small indeed, and require but little labour; but they yield abundant returns. The cotton is spun by the women, and forms one of the principal articles of traffic amongst the inland tribes. The mountain regions, indeed, are most congenial to vegetation in general, and extremely well adapted to the produce of sugar, coffee, cotton, cocoa, &c.

The following will serve to give some idea of the lands further to the westward, in the region of the Macoosy mountains, west side of Reponony. Passed over a barren salt savannah to the mountains; ascended a peak which is nearly isolated (of the range of Parime); it was very steep and rugged, and difficult to climb: found here, on the summit, five large houses, and about twenty men, besides women and children; all Macoosy's, stout lusty people. They saluted us in their manner, by snapping their fingers in our faces, and made us welcome with abundance of cassada, yams, plantains, &c., and a sweet drink made of maize, (red yams) and juice of the sugar-cane fermented, called Awasecoôro, a very agreeable and nourishing beverage. The top of the mountain appears sterile, covered with large rocks. The cassada, corn, yams, plantains, &c., are produced on the sides of the mountain, and thrive astonishingly, notwithstanding the sterile appearance of the soil, which is composed chiefly of reddish indurated clay and gravel, without the least appearance of mould or decayed vegetable matter. This mountain is called Etaka,

in latitude $3^{\circ} 58'$ N. and in longitude $58\frac{1}{2}^{\circ}$ W. It seems extraordinary that *plantains*, which on the coast region will produce only on a *pegass* soil, should thrive so well here. From this spot we could see far along the Cordillera of Parime, Mackerapan, as also the groups of Conoko to the southward, which we afterwards ascended; and, at the same time, the two great systems of rivers which drain the northern and southern slopes by the Essequibo and the Branco: the source of the Perara, the Maou, the lake of Amuku, &c., were visible here. We found on the plain near Yamoory's some very singular plants, and especially an arboreous cactus, (nopal, or prickly pear), and the largest I have ever seen of the herbaceous vegetables, the trunk of which measured upwards of four feet in circumference. Pine-apples, the most delicious, are so plentiful in this neighbourhood as to give name to a mountain, and the Macoosy village of *Annai*, or *An-ni-eh*.

On the 20th we descended the mountain on the opposite (western) side to Capt. Sacooro's. This side has an easy slope, and is covered with trees and an abundant vegetation. Near the plain we passed along a deep ravine, and a stream of water, cool and crystalline, overshadowed with trees and bush ropes (large vines). Passed some trees loaded with fine fruit, called *erong*; several fields of cassada, maize, &c., of luxuriant growth; and we remarked here a few sugar-canes, and cotton-trees, the largest we had ever seen, loaded with pure white and blown cotton.

Thus we shall see, that not only in respect to numberless products useful in medicine and the arts, but likewise numerous fruits and nutritive vegetables, Europe has yet to become acquainted with these fruitful regions of South America.

Condition and Prospects of the Black Population. Increase of the Slave Trade. Concluding Remarks.

The writer was never an abettor of slavery, of the cart-whip, or the cat-o'-nine-tails; nay, he has, notwithstanding any contrary interests, written a small tract in favour of emancipation*, and of colonizing Guiana; some part of which is incorporated in the present essay, a very limited number of the other having been printed. This he did, because he felt, and still feels, persuaded, that every purpose of colonizing and successful cultivation can be answered better by the exertions of free men; and, for a convincing proof of this position, it is sufficient to glance at the prosperous New England States, and compare them with the *slavery* domain in a republic of free men!

The following are a few hints taken from the Christian Remembrancer for February 1831, in which we meet with a comparison of the respective conditions of the West Indian Slave and the British Peasant, to the general correctness of which the author can bear testimony, and therefore leaves the reader to draw the obvious inference, who, if such advantages were possessed by slaves, will be able to infer what it might be for free men.

<i>Condition of the Slaves prior to their Emancipation.</i>	<i>Present state of the free-born Briton!</i>
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<p>“1st. The slave is provided with a comfortable house, of which he cannot be deprived, and good clothing suited to the climate; he</p>	<p>“1st. The British peasant, from his daily labour, must pay the rent of a miserable hut, and provide food and clothing for his family.</p>
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* At the time this measure was in progress, it was a matter of hope with the friends of humanity, that such expiatory acts would have been followed up by others still more necessary at home; and that the barbarous cruelties inflicted by courts-martial, in the army and navy, would ere this have been abolished. But this desirable purpose still meets with opposition from those who appear to be at least a century behind the spirit and intelligence of the age.

is allotted a portion of land, and time to work it, which enables him to maintain himself; his children must be provided with good and wholesome food by the master; he never wants a hearty meal, for if the produce of his labour fail from bad seasons, his owner feeds him, and provides for all his wants.

"2nd. The negro goes to his daily labour a little after six, and toils about nine hours; he has the evening undisturbed, and he sleeps soundly, without a thought for the morrow.

"3rd. If he is sick, he has a doctor to attend him, who is paid by his master; medicines are provided for him, which cost him nothing; and soup, wine, and every thing else which his situation requires are supplied him free of expense; his wife and children are well fed, and want for nothing.

"4th. When the negro dies, he leaves his wife and children without anxiety for their future welfare; he departs with the consoling reflection that want cannot assail them, and that the evils of poverty can never reach them."

If work fails or times are hard, he cannot pay rent, he is turned out of his house, his family must beg, starve, or steal, and perhaps end their days in a poorhouse.

"2nd. The poor man generally labours longer and harder, and when he lays his head upon his bed, *if he has the fortune to possess one*, he knows that, *if the morrow gives him no employment, he and his family get no food*.

"3rd. If sickness disable him from pursuing his daily labour, he can have no medical advice, no physician, no food, no soup, no wine, nor any of the comforts indispensable for his situation, save from the grudging humanity of a parish doctor or flinty-hearted overseer, and even that not always; besides, his wife and children must pawn their clothes to procure bread. Their only resource is the hospital, their only prospect of relief, the grave!!

"4th. The death of the poor man is the acme of human sufferings. His friendless wife and wretched children add bitterness to his dying moments. His honest heart bursts at their future lot. He sees them strip themselves of the covering that should protect them from the inclemency of the wintry blast, to afford him some little relief."

To this it is proper to add, that no instance has ever been known in the Colonies, of any person being taken up in a state of destitution and sent to the treadmill or house of correction as a punishment for the crime of poverty ! a frequent occurrence here, as the public press continually bears witness. This is said to be agreeable to the law : it may be so ; but the magistrate who is capable of putting such atrocious laws into execution, is himself fit only for the office of a public executioner.

Many persons have already left Demerara for Canada and elsewhere. The militia duties are at present very burdensome to the Colonists, although hitherto no great excitement has been manifested amongst the black population ; but this as yet, perhaps, only slumbers. We avoid anticipating the probable consequences pending on the final issue of emancipation *.

In conclusion I may quote a few words on Emancipation, from the pamphlet I published prior to this enactment, and make a brief remark thereon. “ I have ever, there-

* The following notices not long since appeared in the public prints. JAMAICA :—‘ Some of the leading planters and proprietors were discussing a proposition for encouraging the settlement of moral and industrious Europeans here. Some symptoms of insubordination on one estate.’ DEMERARA :—‘ It is a general source of complaint that the negroes will not work without coercion.’ This, as a matter of course, was anticipated by every one acquainted with the Colonies. More recently a gentleman gone out to British Guiana observes, that “ The country has been recovered from the sea by the Dutch, who first colonized it. No other people would have thought of such a thing ! but the soil is rich, and if the negroes were sufficiently abundant, this colony alone would produce enough sugar for the consumption of Europe. At present but a small portion of the land is cultivated, but at some future period, this country may become one of the most valuable possessions in this part of the world. The number of abandoned estates in the district of Berbice is very great, and gives a wild and melancholy aspect to the country. The climate is very healthy, and, I think, extremely pleasant. The sun is often very powerful, but the excessive heat is tempered by a

fore, considered it a fundamental truth that all men are naturally entitled to the enjoyment of equal rights; and this truth is even most generously acknowledged by one of the noblest of British laws, that the slave who touches the soil of England is free. Although, therefore, such principles are opposed to my own pecuniary interest, I truly wish to see all vestiges of slavery swept from the earth; and I know that there are very many amongst my fellow-colonists, more deeply interested than myself, who would be heartily glad to see this safely effected.

“That the most unmerited calumnies have been heaped upon the planters, is true: but where undue power is delegated, men are ever prone to abuse it, and the brutal passions will, at times, predominate over better feelings. In proof of this it is sufficient to look at the military punishments, which exhibit instances of cruelty unprecedented and altogether unknown in the colonies. But enormities practised at home cannot justify similar ones abroad. Government ought long ago, indeed, to have abolished the

fine breeze, which we are scarcely ever without, so much so, that one may safely and agreeably ~~drive~~ in his gig during the hottest part of the day.” (See the *Times* of February 6th, 1835.) This is true enough, but the comforting piece of intelligence on the *possibility of driving in a gig* (!) is worthy of notice, as quite characteristic of the views which *Johnny Newcome* carries out with him. He considers himself destined for a hothouse, or to be roasted in a stove, and is astonished to find he can drive a gig without being melted or dried like an Egyptian mummy. In fact, with many of the inhabitants similar notions are kept up, owing to their perverse customs in regard to drink, hot clothes, and pampered indolence. The writer, in one of the hottest days on the coast (in 1809) *walked* a distance of 40 miles. He started at 5 A.M. from Georgetown (then Stabroek), crossed the ferry, and reached Fort Island at half-past five o'clock P.M.: it was judged, including the various inflections, to exceed forty miles, and no inconvenience was felt from it. But this he never considered to be in the slightest degree extraordinary, and it is now alluded to merely as a counterpart to the gig-driving exploit just mentioned.

cart-whip in the colonies, and the *cat-o'-nine-tails* in the army. Flogging never improved the habits or morals either of the negro or of the white soldier: its effects are constantly the reverse. Of this I am convinced, from my own observation as well as from the uniform testimony of the most sensible and judicious persons.

“I would here beg leave to express a hope that the Ministers of Great Britain, whilst they nobly exert their power in forwarding the great cause of humanity in the British Colonies, will not rest contented till they have banished slavery, or the slave trade at least, from the grasp of other less generous nations, who continue this trade on the coast of Africa. Let us consider that throughout the vast extent of the Brazils, of the foreign islands, Surinam, Cayenne, &c., this traffic in human flesh is still carried on.

“This is the proper time for negotiating with other powers, the European and American states, as one which offers both precept and example for obtaining a general emancipation. And why allow the naval power of Britain to slumber,—her ships mouldering in the docks, and her officers on half-pay, though these brave men, as I have heard them declare, would vastly prefer active employment in suppressing this infamous traffic, even if it were on half-pay only? *Should indeed this matter be neglected, the great measure now in progress will be but partial and trifling in its results.* The concurrence of other powers, there is no reason to doubt, might be obtained through the influence of the British Government. If this be not effected, and should the colonies be abandoned to their fate, without some alternative, (as that I have pointed out, or one more efficient,) the consequence, it is plain to the meanest capacity, must be, that the British possessions will be annihilated or rendered useless, and colonial commerce will pass into the hands of rival nations, who will thus be excited by

additional gains to pursue an execrable trade with more energy than ever."

That such will be the result, and in fact that this is already the matter of complaint amongst the short-sighted and misguided philanthropists, is now too obvious to be dissembled. Mr. Buxton recently declared to the great meeting at Exeter Hall, that, although eight hundred thousand slaves have been liberated by the recent Act of Parliament, there still remained five millions in the most abject slavery. See the *Record* for May 7. It appears too, by accounts just received, that the demand for slaves is increasing in the foreign colonies, showing a greater activity or avidity in the traffic, as I had anticipated.

On the 12th of May Mr. Buxton brought forward in Parliament his proposed motion on the subject of the slave-trade. He referred to the papers laid before Parliament to show how actively that nefarious traffic had been carried on by other powers, and how, in the short period of a year and a half, 150,000 slaves have been imported into different foreign colonies, and 264 ships engaged in the business. The return from Sierra Leone proved that an extensive destruction of human life took place in the captured vessels. The Hon. Member recommended that slave-vessels when taken should be broken up, and that prize-money be allowed to the captors on a more liberal scale. No good, however, could be done till the slave-trade was declared piracy, and the right of search conceded by other nations. A general treaty should be negotiated for these purposes, and he could not doubt but France and Spain would join in such treaty. After an address of great length, the Hon. Member concluded by recommending an Address to His Majesty, recommending the negotiation of a treaty for the extinction of slavery.—See the *Standard* and *Morning Herald* of May 13th, and all the public prints.

But it may now be too late to induce those countries to relinquish advantages which they may find they have gained over the British Colonies. It is therefore to be lamented that the blind and impetuous zeal of a party in this country has defeated its own purposes; and, so far from alleviating, it has doubtless entailed far greater calamities on the African race. In further elucidation, we observe a notice from Brazil, which now appears in the public prints:—“Vessels are reported in Monte Video almost weekly as arriving from the coast of Africa in ballast! having landed their cargoes of slaves on the coast of that province or of the Brazils. It is a notorious fact that this iniquitous trade is daily increasing.—See the *Times* of May 25th.

Should the views set forth in this pamphlet, or any similar ones, be adopted, it is probable that the want of slaves will be fully compensated by free labour, even on the coast of Guiana, but most richly so in the Interior, where less labour and expense will produce greater returns. Such considerations ought to be sufficient; but if the superior salubrity of the air over that of the coast be added to the immense advantages of the inland cultivation, we should think that all parties would concur in these views—planters, merchants, and every friend to the colonies, to this nation, and to reason, common sense, and humanity. This, indeed, is the region of health, whilst pernicious fevers still occasionally prevail upon the low mephitic lands of the coast.

Here, in reality, are the means of reconciling every British interest on this subject. Let Government but bestow a comparatively trifling expense upon the land- and water-carriage of Guiana, and the interests of the colonists and of all others may be at once reconciled, and one of the noblest colonies rendered available to the nation.

No wild or impracticable proposal is here made. Little

pecuniary sacrifice is required,—little, compared with that which has been uselessly bestowed upon untenable and most pestilential spots on the coast of Africa.

The surplus population of this country, instead of encountering the frozen regions of Canada, would there find the happiest relief from the miseries to which they are unfortunately reduced, for their labour would prove a source of wealth to themselves as well as to the mother-country. Besides, it is only under such circumstances that the condition of the black population can be rendered comfortable and compatible with rational freedom and civil order.

Were these views once realized, by extending the cultivation to the Interior, Guiana would, in a short time, send forth a greater quantity of valuable produce than any other portion of the American continent; and a Company like that here proposed, would undoubtedly compete with every undertaking of a similar kind; it would shortly realize a profitable return for the capital employed, and contribute immensely to the extension of commerce and British manufactures.



APPENDIX.

THE present Pamphlet was announced six or eight weeks ago, at the time it went to press. Its publication has been delayed on account of some advices expected from the Colonies; and this has afforded the opportunity of making a few additional remarks from authentic sources, which have recently come to hand. In the mean time, I have to acknowledge the liberal indulgence shown at Mr. Taylor's Printing Office, in keeping much of the type in form for several weeks.

I shall here quote a few words from Mr. Montgomery Martin's recent 'History of the British Colonies,'—an author whose accuracy, intelligence, and deep statistical knowledge are too well known to the world to need any commendation from me. Amongst other items, I have observed the following statement:

“ Some idea may be formed of the labour required in drainage, and the capital required to establish it, when it is stated that thirty miles of *private* canals, twelve feet wide by five deep, and two hundred miles of drains, are required for the drainage and transportation of the canes to the mills of an estate producing seven hundred hogsheads of sugar.” Vol. ii. p. 135.

It is worth while to contrast this with the inland cultivation, where the produce would be much greater, and with little or no labour of drainage.

In regard to some very material articles of supply, the labours of the Parliamentary Committee prove, that “*a strict monopoly is still maintained in favour of the mother-*

country, or of her North American possessions." This is represented by the Committee as exceedingly prejudicial to the Colonies: and Mr. Martin observes, that

"The direct effect of these commercial restrictions has been computed by the West India merchants at the annual charge of no less than £1,392,353 sterling; thus abstracting from the pocket of the planter, in the article of sugar alone, 5s. on every cwt. of sugar he makes." Page 449.

So heavy, in fact, are the Government imposts, that very frequently, to my own knowledge, the planter, so far from profiting, is a considerable loser on shipping his produce: and such facts justify a remark in my essay prior to the Emancipation Act, that "the people of Great Britain are, generally speaking, sensible that it is the mother-country which has hitherto benefited by African slavery, however impolitically; and that most of the profits on colonial produce have been derived by Government, leaving the planter but too frequently insolvent. Is it not monstrous, then, to suppose that the planters, who have only acted under the regulations of Government, are to be singled out as victims for utter ruin? If this were suffered to occur, we might then truly deem it the act of a faction, and its professed humanity a farce."

One of the most useful of all modern improvements is that of the manufacture of sugar *in vacuo*, which would enable the planters to afford this necessary article, raw sugar, at a price within the means of the multitude: but it appears that both the sugar-growers and the whole nation are to be debarred from profiting by this notable invention, because it would militate against the interests of a few avaricious and wealthy monopolists (sugar-refiners); who therefore petitioned Parliament, and, by the aid of specious representations, obtained such a duty to be placed on this manufacture as must operate as a total prohibition. Such erroneous policy is utterly inconsistent with the commercial intelligence of this country; and even the Pacha of Egypt

has shown more wisdom and liberality of mind, having recently sent to England for an engineer to construct the apparatus for preparing sugar *in vacuo** !

It is to be hoped that Government will, in its wisdom, reconsider this matter, and see the impolicy and injustice of those enormous taxations and restrictions on colonial commerce, and allow the colonists to obtain relief from their embarrassments, by the privilege of a free and direct trade with any foreign countries.

No man has ever given a more lucid and impartial view of the wants of the Colonies than the author before quoted, Mr. Martin : he observes (page 456.), that,

“ With the curse of slavery, the blighting effects of hurricanes, and the far more destructive influence of commercial jealousy, the wonder is, how the West India colonies have maintained themselves during the last thirty years ; nothing but the unconquerable energy of Britons could have surmounted the ruinous prospects and destruction of property which have been annually going on, and which will progress in an accelerated ratio, unless the islands be permitted to renew their commercial intercourse with Europe and America, totally unfettered by any legal restrictions from the mother-country. Give, I repeat, the British West Indies that unlimited mercantile freedom, for which their geographical position, fertile soil, and fine harbours so eminently qualify them, and neither the mother-country nor the colonies have anything to fear for the future.” And he adds, “ To deny them this much longer in their paralysed state of existence, must be attended with absolute misery and ruin.”

* By this method, the raw sugar, at a single operation, is obtained in great purity on the principle latterly introduced of preparing vegetable extracts *in vacuo* ; a method which, with the improvements of Messrs. Oaks and Dodson, has been found most successful in Demerara. The depurated cane-juice is thus crystallized, at a great saving of labour and fuel, and at a low temperature, uninjured by heat, or the quantities of lime and bullock's blood, which, both in the old way and in the refining process, are largely employed. It should be considered that lime, by much boiling, unites chemically with sugar, and forms an unwholesome compound of less sweetening power.

These are truths which merit serious attention; but Mr. Martin seems not to be aware of certain internal abuses, as the oppressive taxation by the Colonial Governments, the waste of the public money in divers useless expenditures, the high salaries lavished on the servants of Government*; and in allowing the Governor to create at will new sinecures or useless offices for the equally *worthy* object of promoting *favouritism*. In fact, all the corruption and abuses of old European Governments are imitated here in great perfection. Although the Colonial Legislature can boast of some enlightened members, whom I could name, possessing the most liberal and independent spirit; yet such is the construction of the Government, as ever to keep in place a sufficient number of servile adherents to the power delegated by royal authority, and such as constantly to give an undue preponderancy against the liberties of the people. Such, it strikes me, are the fundamental points of internal polity which operate against the interests of the colonists. The Colonial Legislature (of Guiana) consists, or consisted, of a *Court of Policy, a College of Keizers and financial representatives,*

* Servants, I say; but it is not in the Colonies as in France or in the United States; for the moment one is invested with any place of trust under Government, he is looked up to by the obsequious and ignorant as something super-human, and who, with the military officers, are regarded as subordinate deities; and through an ignoble pride, (or ambition to associate with those considered so worshipful,) many have ruined themselves by giving extravagant fêtes and entertainments to those who, aside, scoffed at their folly. This has been most observable amongst inferior persons, who, going out perhaps penniless, have suddenly acquired property. The Scotch possess, in general, more of correct taste and prudence, which there, however, is commonly construed into avarice. Many salaries are excessively high, and the fees of office exorbitant; and thus the public money is squandered in the most profligate manner in the colonies. It must be confessed that such abuses are but too legitimate, or accordant with the system pursued at home. Does not an envoy to North America receive a salary exceeding by 500*l.* that of the President of the United States? and those of the European Courts twice his salary!

founded on the Roman code as established by the Batavian republic; which, however, by successive enactments, has been grossly perverted, so that, instead of a representative form of government, it may now be regarded as an absolute one in disguise.

Mr. Martin observes (p. 449.), that “the emigration of Europeans, or whites, to the West Indies, should be encouraged by every possible means; the millions of acres of fertile territory in Crown lands, now lying waste, should be granted at a nominal quit-rent to any person of industry and character for the purpose of colonization.” Some remarks follow from respectable colonial papers, and from the *Liverpool Standard*, the able editor of which has proved himself to be one of the staunchest friends of the Colonies:

“In Jamaica, the owners of the soil are apprehensive that the blacks will not work, and they want from this country whites who will, in order to make their freeholds valuable. Let us, then, suppose the industry of fifty or one hundred thousand persons transferred from England, in which their utmost exertions, early and late, can scarcely furnish the mere necessaries of life, to one where two thirds the toil will bring threefold the returns.

“How will this additional return be spent? It will reach England, every fraction of it: all their wants are English; and an additional impetus will be given to English manufactures and to British shipping. Let us suppose that emigrants, or emigrants’ children make a fortune, where will it be spent? In England, to be sure. Very exaggerated views are entertained in this country relative to the difficulty and danger of agricultural labour in tropical climates, &c.

“The wages which estates would pay to labourers of this description, may be stated generally at the rate of 8*l.* per man, 6*l.* per woman, 4*l.* per boy above ten years of age, annually, with a house and provision-grounds rent free, as well as a day per week, exclusive of Sunday, for cultivating their grounds. This would enable them to raise sufficient food for their support, and somewhat to sell besides. A labouring family, consisting of father, mother, and three children, (two above ten years of age,) might earn as wages 22*l.* sterling per annum, have their house and provision-grounds rent

free, live on the produce of the latter, and sell the surplus provisions, which, if they were industrious, would yield them 20*l.* sterling in addition. 'The individuals who intend making proposals to the English peasantry to emigrate, will require that all they employ should be bound, by a heavy penalty, not to taste ardent spirits.'

I should dissent from this last proposition, but should think it right to make a very material distinction in the wages of those who are and those who are not addicted to the habit of drinking strong liquors.

In confirmation of the above, and of the views expressed in the foregoing pages, it is with great pleasure that I refer my readers to the following copy of an extract from the *Weekly Dispatch* of April 26th, referring to the success of a similar attempt to that suggested in my proposals, and which has been recently brought into operation in Jamaica :

“ The recent importation into Jamaica of nearly eight hundred European labourers, who receive a bounty of 15*l.* per head, consisting of carpenters, masons, ploughmen, &c., and for whom an Act has been passed, granting 5000*l.* in order to establish townships, appears to have given great satisfaction to the planters in the neighbouring colonies, who express a hope that the same indulgence will be extended to them. This is a matter pregnant with importance.”

If such success has attended the experiment in Jamaica, we may anticipate the most extended benefits to await it in a country so rich by nature as Guiana.

In reference to what has been said of the nutritive vegetables of Guiana (p. 11.), it may be observed, that sago might also be prepared there as well as in the East, from several species of palm, as the eta, manicole, mountain cabbage, &c.: and the tapioca, so highly prized in this country as an article of diet for children and invalids especially, is nothing but the *farina de manioc*, divested of the woody fibre by sifting, and might be procured in abundance, and at a very low rate, from the British colonies. I was told by one of the most sagacious of scientific economists,

Sir John Sinclair, that tapioca has been proved, by comparative trials, to be one of the most beneficial and wholesome of nutritive substances. Strange to say, this invaluable preparation is as little known in the Colonies as it is here, that is, with respect to the process for its preparation, although not less simple than that for obtaining cassada bread. When travelling with the *Mamelukes*, so called, (Portuguese soldiers of the coloured race,) on the Tacotu and Parime, I found we could subsist very comfortably on a daily allowance of a half-pint measure of this substance. It is erroneously supposed to be the mere starch of cassada, instead of the entire farina.

The settlements in British Guiana consist of plantations of one single depth only, along the sea-coast, and extending a short way up the rivers. Yet the commerce of this colony is estimated by Mr. Martin at about one million imports, and three million exports, employing upwards of 132,000 tons of British shipping, about 1200 ships, and serving as a nursery for 11,000 British seamen.

Many of the creeks of this coast have long since disappeared, and are only to be seen on the old Dutch charts; and this accounts satisfactorily for the increasing salubrity of the coast; but, besides which, the indulgence in luxury and indolence and the use of strong liquors is by no means so prevalent as formerly.

A singular substance (alluvion) is constantly floating about this coast abundantly, called *drift-mud*; it appears to consist mainly of clay in minute division, blended with slimy animal and vegetable matter, similar to the deposit brought every spring upon the Coös meadows of New Hampshire, alluded to at page 6. It would doubtless form an excellent fertilizing compost for poor lands.

Formerly we had no fresh water on the coast of Guiana, excepting that caught from the clouds on the tops of houses: but the water which Major Staples has obtained by boring is esteemed to be of the purest quality. It is

worthy of notice, that water procured from great depths has very uniformly been found to be superior in purity and salubrity to that whose source is more superficial: and another great advantage in deep springs is, they are constant and inexhaustible at all seasons.

It is surprising that to this day the greatest city in the world remains content with the filthiest water that ever man drunk, and rather singular too, that in this important matter it should have allowed the infantine colony of Demerara to *go a-head* of it.—See ‘Geological Notice,’ p. 26.

If any part of the world can offer a proper object for the attention of Government, I should think it ought to be Guiana. Vast sums have been expended on Northern expeditions for the discovery of a north-west passage to China, which, even if effected, could be of no practical importance or real utility. But we will suppose that their objects have been the extension of our knowledge of distant parts, and general advancement of the natural sciences. Without wishing in any manner to undervalue the enterprises of intrepid navigators who have braved the dangers and inclemencies of those dreary and sterile regions, it must appear, on sober reflection, that the importance of their voyages have proved by no means commensurate either with their own sufferings or the national expenditures attendant thereon. We shall find that many whalers had been much further north; a friend of mine, Dr. M’Pherson, many years since observed in lat. $82\frac{1}{2}$ degrees north: many have, doubtless, reached a much higher parallel, as the American whalers especially. But what is there so interesting amidst the fields of arctic ice? And what if the position of the magnetic pole has been accurately fixed, it differs not greatly, perhaps, from that assigned it by theory; and whether it be right or wrong, it will not affect a hair of our heads. But would not half the sums expended in these enterprises have effected in Guiana infinitely more for science, for commerce, and the advantage of society? But, oh! the

grandeur of the polar scenery ! exclaim those who have seen piles of ice painted on canvass*. I should say, however, that the tropical countries offer objects not less worthy of admiration ; for here is presented the grandeur of nature in the animal, the vegetable, and mineral kingdoms ; in the brilliancy of the stars and the ethereal sky. No mountains of ice can vie in height with the southern granitic declivities of Mackerapan and Potaroo, or with the natural pyramid of Ataraipoor, nor even with the rocks of Taquarie, only forty leagues up the Essequibo, not to speak of the grandeur of the falls of this river, and a multitude of objects so little known in this *island* of Demerara, as it is not unfrequently termed in the parliamentary debates.

Emigrants might go out to Guiana at all seasons of the year, almost indifferently, although the summer months are, perhaps, to be preferred, as the transition or change of temperature will then be less sensibly felt†.

A sudden or unwonted increase of heat evidently rarefies or augments the volume of blood and excitation of the body, as we experience here in the spring season ; and for this reason, persons on entering warm climates ought to observe moderation in their diet and regimen, especially till they become habituated to the climate. Much animal food and strong liquors increase the tendency to inflammation.

Captain Ross, I observe, in his recent work speaks of the effects of *oils* and *fat* meats as generating heat, and says, they are found necessary by the natives for the pre-

* Captain Ross himself observes that, "amid all its brilliancy, this land of ice and snow has ever been, and ever will be, a dull, dreary, heart-sinking, monotonous waste, under which the very mind is paralysed, where nature offers no variety, where nothing moves or changes, but all is ever the same, cheerless, cold, and still."

† Emigration to Sydney or Australia implies an eternal separation from family, country and friends. it is not so in undertaking the voyage of a month or six weeks.

servation of life in the frozen regions of the North. This is a curious fact, and, I think, correct ; but animal food in general, whether fat or lean, together with the use of fermented liquors, are ever powerful in resisting the effects of cold, or generating animal heat : and the observance of temperance and moderation is far more effectual in guarding against plethora and disease than bleeding, as advised by many writers, and which, in fact, is the way to increase the plethora, and a practice by no means advisable as a common rule. Symptoms of indisposition should alone indicate venesection.

Those who, on entering a warm climate, may feel indisposed with headache or febrile symptoms, will (in plethoric habits especially) do right to lose blood and take some laxative medicine, and wear flannel or thick cotton next the skin to maintain a moderate perspiration. This requires particular attention ; bleeding in such cases serves to give freedom to the circulation and the secretions. The state of the perspiration, it should be remembered, is ever the surest index to the state of health.

Dysentery, as well as fevers and most other disorders, are to be guarded against by due attention to the perspiration. A striking correspondence between the bowels and the skin is universally acknowledged ; but this is mystified by the name of *sympathy*, *affection*, &c., and hence the obvious and rational practice is mostly overlooked or neglected : on the attacks of disease purgatives are too much relied on, instead of the direct means, by the use of baths, frictions, and diaphoretic remedies, and by assisting nature, when necessary, to relieve constipation, by laxatives, not drastic purgatives, which cause exhaustion, debility, and nervous disorders*.

Not only are cutaneous diseases, fevers, and exanthems

* The precepts of one of the most sagacious and successful physicians that ever lived, Sydenham (well named the English Hippocrates), appear to have been forgotten, or never duly adverted to ; he affirms that such

most successfully treated by the sudorific method, but those also termed nervous and spasmodic, which are aggravated by the cathartic practice, or often excited by it: even tetanus, which resists all other methods, yields to this, as many judicious persons in Essequibo can testify, and amongst these, an enlightened physician, Dr. Thomas Bell, of long and tried experience*.

Of the divers remedies used as antispasmodic sudorifics,

disorders are not to be successfully treated without the aid of external means, which produce perspiration, or a determination to the surface of the body. What would this great man have said to the endless purging system now pursued? or to the still more fatal practice in erysipelas, in repelling the eruption by caustics, cold applications, and by frequent purging and bleeding (instead of aiding the natural effort to expel the offending humour), and by which preposterous practice, a disorder of little danger, when properly treated or even when left to itself, is rendered one of the most destructive.

The above assertion of Sydenham strikes me the more forcibly, because I have seen it so fully exemplified amongst the American natives; otherwise, I should probably have paid no more regard to it than others have done, for I followed the destructive practice of the schools, I lament to say, for many years. Without disparagement to any one, it might be said, that the present age can no more boast of a SYDENHAM in physic, than it can a BACON in philosophy, or a SHAKESPEARE in the drama.—Maggendie, if any one, may be regarded as the successor and shade of the illustrious Sydenham; the former is a more experimental, but, perhaps, less the practical physician. As to those who have deluded us with their "*spasm of the moving fibres and solidum vivum*," who regard inflammation as dependent, not on debility, but, *e contra*, on too much strength, or "*increased action*," and who (of this one condition)—how monstrous the idea!—make about twenty *genera* of inflammations,—these idiots, I must say, are unworthy of notice, unless to be deprecated for their mischievous deeds, and for the evils they have inflicted on the world.

* It must not be imagined that this is said from any sinister or interested motives, or from the too common spirit of puffing and humbug; for although, to the best of my humble capacity, I assist my friends and the poor, and all who apply, yet I can assert that, on no occasion whatever, since my return to this country, (now seven years), have I received any reward, although frequently proffered; and in this, too, I might appeal to my fellow-colonists to say how far my conduct heretofore has been influenced by mercenary views.

are the leaves of the cashew and wild gnava, and especially a small bitter, aromatic, and camphoraceous plant, called *haioxabally*, of the *Composite* order: it grows on sandy soils, about a foot high. An infusion of it, taken warm, is very powerful in fevers, rheumatism, &c., producing tranquillity and an abundant perspiration. These, and many others, are employed in vapour, warm-water baths, and fomentations, the powers of which are thus very much enhanced. The medicinal plants of Guiana are exceedingly numerous, and I propose to submit to the public some account of the principal ones in a separate work.

It is not unfrequently found difficult in fevers to induce a perspiration, or to maintain it when begun; this is especially observable in the more ardent fevers. In such cases a bucket or two of cold water should be thrown over the patient. This, occasionally alternated with the warm or vapour-bath, constitutes the most essential part in the treatment of fevers, which, together with bleeding, when requisite, are thus most effectually arrested; the collapsed capillaries or cutaneous vessels being thus excited, a perspiration is produced, and on this the fever is presently brought to a termination; an event which no other known agent under heaven could effect: to this, with God's mercy, I owe my own preservation and escape from many attacks of the most perilous ardent fevers of tropical countries.

Consumption is now declared incurable*, measles exceedingly fatal; and by the public prints of the day, we find most respectable and honest practitioners declare that upwards of half the number of their patients die who are attacked with small-pox. (See *Weekly Dispatch* of May 17th, 1835.) Are diseases in general more virulent or less tractable now than formerly? or, does the ill success arise from mistaken views of the nature of disease, the consequent

* On this, see page 30,—a matter, I should think, worthy of regard in a country where pulmonary consumption is said to destroy about one fourth of the inhabitants.

misapplication of remedies, and imbecility of the healing art (the fault of the schools, not of individuals)? and, is it not that a diligent study of disease and of remedies has given place to an infinity of vain speculations (termed *scientific*) on anatomy, physiology, chemistry,—to metaphysical hallucinations and unprofitable puzzles on the functions of the brain and nervous system,—which, like the *ignis fatuus*, only bewilder and recede from the pursuer.

These remarks are taken partly from a MS. work of the author, and may be deemed out of place here; but a medical friend has suggested, that works expressly on medicine are not read unless by very few, and those who, for the most part, are jealous of innovations, who hold in reverence all that is consecrated by time and high *authorities*.

Some better regulations should be substituted in the Colonies with respect to religious instruction. Although many of the missionaries undertake their office with the most correct motives, it is not so with all; there are those who seem bent on sowing dissensions amongst the black population; and I know this to be true, whatever may be said to the contrary. The Catholic form of worship is the most conducive to order and unanimity; it is a powerful auxiliary of Government. What gives Mr. O'Connell the dictatorship in Ireland but the support of the Catholic clergy? Without this, his high talents and eloquence would not hold such a sovereign sway over his Catholic brethren. Nevertheless, it is not my purpose to advocate the power of His Holiness the Pope, in the Colonies. I should prefer the principles of the Church of England to all others, because we have seen the best results from their influence over the morals and conduct of the black population: not that I would ask what a man's religion is,—it is enough that he be just and charitable; sectarian contentions are disgraceful to men of the smallest understanding. If men would learn simply to practise charity towards each other, those vast *tomes* and masses of rubbish, presumptuously

termed Theology,—only perversions of the Sacred Scriptures,—would soon be consigned to the tomb of all the Capulets.

It is commonly said in America, and not without reason, that the most stubborn puritans are usually inveterate sinners, who have repented from a fear of hell (if that be repentance), and who consider it necessary to perform some signal acts of devotion by way of atonement: so perverse are many of these deluded creatures, that they really think they do “*God service*” by inflicting corporal punishments on themselves and their fellow-creatures. Such acts are calculated only to sour men’s minds, and bring the most genuine religion into disrepute. Such, too, were the deluded fanatics by whom, formerly, so many unfortunate old women perished under the imputation of “*witchcraft*” !! as in New England, Scotland, &c.

The restraints imposed on the blacks with respect to their Sunday recreations are impolitic; they have been attended with much discontent: and I see no reason for the interdiction of their dances and pastimes, which are conducted with great harmony, and without those broils and tumults which ensue where restraints are imposed by the laws. Should heartless misanthropes succeed in their diabolical endeavours to rob the English labourer of the few moments of innocent pleasures which Sunday offers amidst his almost incessant toils, it is to be hoped the colonists will have more good sense than to impose on the blacks such restraints as will ever be regarded with repugnance. The negroes look on the Sabbath not as a day of sullen sorrow, but rather as a sort of gala day, as do the French, Spaniards, and most of the European Christians.

The passions and physical constitution of different races give them a natural bias for peculiar modes of religious worship: of these modes, some are dull and gloomy, and require their devotees to be so, as though they considered the benevolent Father of all as a Being actuated by the most dire and vengeful passions, plotting their destruc-

tion, just as the Ackawais regard their *Kanaima*. Now such persons we usually find to be of the most unkind and gloomy tempers: but such, in general, is the good nature and impetuous vivacity of the African races, they will never with any cordiality embrace Puritanism. They are inclined to regard innocent recreations on a Sunday as in no way sinful, and it would doubtless surpass the zealous piety of a Sir Andrew Agnew to convince them of the contrary.

Notice of Timber and Fruit-trees in British Guiana.

Considering the enormous expenditures incurred by Government for supplying the British navy with timber for ship-building, as now obtained from North America and the Baltic, it might be an object highly worthy of attention to establish a naval arsenal or depôt in the Colonies, where abundant materials might be obtained at comparatively trifling expense: and no part of the world, perhaps, offers so great advantages to this end as the united colonies of Essequibo, Demerara, and Berbice.

It is well known that vessels built in Brazil are of a very superior description in respect to strength and durability. Guiana furnishes, for the most part, the same woods, and many others unknown to Europe. I shall here briefly enumerate a few of the more valuable timber-trees which are best known in the Colonies, and employed either in ship-building, for colony craft, or in the construction of houses. Beside these, are other finer species of woods, which might be sent to Europe as most valuable for cabinet-work, turnery, and household furniture.

Of woods mostly employed, I shall first give the result of Reports drawn up by practical shipwrights of long experience in the construction of schooners and colony vessels; the first nine, following, being from their Reports, nearly *verbatim*, adding only a reference to the genus or botanical affinities, so far as known.

“ 1st. *Seperi*, or *Green-heart*. This is a remarkably fine-grained and hard wood, well adapted for vessels' planking. Can be had from twenty-four feet to fifty, squaring from twelve to twenty inches, well calculated for all water-works.

“ 2nd. *Mora* (*Mimosa* sp.). This wood is the same as the celebrated Teak of the East Indies, and equal, if not superior, to Oak (not subject to dry rot, in the tropics at least.) It can be obtained in lengths from thirty to fifty feet, and squaring from fourteen to twenty-four inches. The crooked timbers of this tree and the planks would be of the greatest utility for keels, knees, and planking of the upper works of the largest vessels in the navy.

“ 3rd. *Sawary* (*Pekea tuberculosa*, Aubl.). This is of nearly the same nature and properties as the above, except that it cannot be obtained in such lengths, but in many other respects equally eligible, and usually squares something larger.

“ 4th. *Bully-tree* (*Achras balata*). This tree is of a dark purple hue, hard, and well calculated for beams, posts, or uprights, &c.; it can be obtained of various lengths, and will square from twelve to twenty-two inches.

“ 5th. *Sirwabali* (Fam. *Laurineæ* or *Ocoteæ*), three or four different species*. This is a lighter wood than those above described, and is remarkable for a peculiar aromatic bitterness which it contains, and acts as a preventative of the attack of worms. This is the wood of all others preferred in the Colonies for planking of craft, and on that account is well adapted for the construction of long-boats, gigs, &c., or any other works subject to be attacked by worms. This wood floats.

“ 6th. *Crabwood* (*Carapa Guianensis*, Aubl.). This is a light and red wood, generally used in the colonies for floors and partitions. This wood *also floats*.

* One of these (the yellow Sirubally) is the rose-wood, *bois de rose*, which exhales a fragrant odour.

“7th. *Purple Heart* is one of the scarcest and most valuable woods to be found in nature; its dimensions are large, and its qualities are superior to any other wood in sustaining the shocks occasioned by the discharge of artillery. At the siege of Fort Bourbon in Martinique, this wood stood the *test*, while all others failed, as mortar-beds.

“8th. *Tonkin Bean* (*Diptera odorata*, Willd.). This is a very hard wood, fit for the cogs of wheels, or anything that requires great pressure.

“9th. *Cabacally*, is similar to Bully-tree in most respects, and little inferior to it, being very hard and durable*.”

Caraña, Cedar of the woodcutters (*Icica altissima* of Aublet†.) A very large tree, the wood of which abounds with resin. It is light, and much like Deal, but far more durable, and of a reddish colour. It would probably be a most excellent material for the masts of vessels, being sixty or seventy feet in length, and four or five feet diameter. Bark red, very astringent, and excellent for tanning. Abundant through interior Guiana.

Wallaba. A most durable reddish-brown wood, full of an oily resin. It splits smooth and freely, and is universally employed in the colony for covering houses, for water-vats, &c.: it is the *Eperua* of Aublet; Willdenow calls it *Panzeri*. It attains about sixty feet in height, and three or four in diameter; bears a large sabre-shaped legume.

Nacoca, *Iron-wood*, called Palo Santo by the Portuguese, a large leguminous tree (*Robinea panacoco*, Aubl.). The bark of this tree, as Aublet observes, is employed in

* The leaves of this tree are remarkably fine or small; and a singular coincidence is generally observable between the texture of the wood and size of the leaves amongst the tropical vegetables, in the trees especially, so that, on seeing a leaf, we can form a very probable idea respecting the degree of hardness or solidity of the wood. I have no idea of the classification or botanical analogies of this tree, the Cabacally.

† From this tree it is that the balsamic odorous resin, called *caraña*, is procured, the source of which has heretofore been a matter of conjecture.

sudorific tisans; it is rough, thick, and gives out a red balsamic liquor. The wood is reddish brown, becoming black by age: it is hard and compact; in great esteem at Cayen in the construction of vessels. It is regarded as incorruptible according to Aublet, who says, he had seen pieces of this wood which remained sound after having lain partly buried in the ground for more than sixty years.

Pucheri and *Waibyma*, large trees of the Laurel kind; excellent timber: abound on the mountains of Repononi. Specimens of the bark of *Waibyma* brought by the writer in 1811, are still strongly aromatic: used by the natives as a remedy in fevers and dysentery.

The *Yari-yari*, a small tree, grows slender and straight (*Anoniaceæ*). This is the Lance-wood, already known here to coach-makers as the best material for the shafts of carriages, and which, they say, from its toughness or elasticity is not subject to be broken.

Yarury, a large tree, the roller- or paddle-wood. This, probably, might furnish the best material for floats or paddle-wheels of steam-vessels, as being, although light, exceedingly strong and elastic; and not being subject to splinter, it might also prove superior for gun-carriages, and for the bulwark of ships of war. The lower part of the trunk grows into singular fluted or flat tabular projections, forming cavities or compartments, capable of holding several persons. Other trees of the tropics occasionally assume a similar structure, as the *Mora*, and some large fig-trees, which occasionally serve the natives as ready-made planks for floors, tables, or benches. The *Yarury* appears to be a non-descript both in genus and species. It pertains to the fifth class and first order of Linné's system. Its curious fruit and capsules may be seen at the Med. Bot. Society's rooms, Sackville-street, noted in my botanical memoranda under the title of *Yaruri tabularia*. The bark of this tree is very bitter, and has been employed as a substitute for the cinchona with great success by Dr. Burton.

Simiri of the Arowaks (*Hymenaea courbaril*). A very hard and compact wood, used for mill-rollers. On the higher lands it yields great quantities of copal, or a resin scarcely distinguishable from it. It is singular that the guttiferous trees seldom give out their exudations on the coast, which they do abundantly inland.

The *Bicy*, or *Besie*, of which the Indian corials and canoes are chiefly made, is of great durability, and is, like the *Siruba*, proof against the worm. This tree, or a variety of it, yields a singular green resin, which might be applied to valuable purposes as a varnish.

A species of wild Orange, called by the natives *Waranana*, a timber-tree, grows large in Pomeroon, Supinam, &c.

Oubudi. The wood of this tree is white, soft, and only fit for heading for sugar-hogsheads, boards for wainscoting, &c.: unless cut down about the time of new moon, when the sap is said to be down*, it is subject to be perforated by the borer (*Teredo*) and other small worms. (See p. 17.)

The *Macorypong* (?), the tree which bears the Ackawai nutmeg, so termed, (of the mountain regions,) is said to be durable timber, but is chiefly prized for its large aromatic and astringent fruit, which is considered to be one of the most efficacious remedies in diarrhœa and dysentery, colic, and spasmodic pains. Its botanical history is entirely unknown; but Dr. Lindley, who has inspected the fruit, regards it as pertaining to the natural order *Laurineæ*.

Bannia, a dark-brown and very hard wood, similar to ebony.—*Ducalibali*, and *Letter-wood*, one of the most precious and beautiful of ornamental woods; as also *Ilobobali*, and numerous other fine woods, adapted for cabinet-work and turnery, for divers ornamental purposes.

* This remark applies more or less to all timber. It is founded on the experience of the woodcutters; and, in fact, common observation proves that the lunar influence is far more sensible in equinoctial countries than in high latitudes, on the weather, vegetation, &c.

The common fruits of the tropics are so abundant in Guiana, that the wild or native ones are not attended to, and remain mostly unknown: the *Pacory*, a species of *Garcinea*, or Mangosteen, gives out a grateful perfume. It grows to a large tree on the Pomeroon, Tapacoma, and divers parts of the colonies. Its wood is employed for planks and framing, and its large apple is eaten by the natives; yet to this time it remains unknown, perhaps, as to botanical affinities, or its alliance to the prince of East India fruits. The tree is replete with a yellow gum, much like gamboge: but the true *Stalagmitis cambogioides* (or a near species) is also found near the coast, a small dioecious tree, observed aback of the Richmond and Lima estates.

I subjoin a list of several other trees: I give the native names, for the best of reasons, because, with few exceptions, we have no others, their botanical history being little known; and although it were, yet the vernacular names are alone useful for readily identifying, or finding, through the natives, any tree (or other production wanted). It may be observed, however, that the natural families of *Sapotaceæ*, *Laurineæ*, and *Malpighiæ*, furnish a very large proportion of the more valuable timber- and fruit-trees.

Bartabali.	Waremia.
Touraneru.	Kofassa.
Assepoca.	Waiki.
Hymarakusi.	Maparakuni.
Kumara-mara.	Sirada.
Arawiwa.	Kula.
Hakkia.	Kamakusa.
Armiosi.	Juribali.
Dūka.	Kautaballi.
Hya-hya.	Etikeburiballi.
Kakarawa.	Sibbadani,
Akaraku.	Tataba.
Quaku.	Diterma.
Kurudani.	Hyaribali.
Urehi.	Kurahara.

The first fifteen are trees which bear edible fruits, some very delicious, and would yield very excellent wines, cordials and spirituous liquors, and most of them are valuable timber. The *Sibbadani* is, perhaps, the bitterest of all woods; even the *Quassia amara* has not half the power or intensity, and from its antiseptic and salutary properties, it might be found a valuable addition to malt liquors. From the berries of the *Urehi* the natives prepare a most pleasant nutritive drink similar to chocolate,—as they do likewise another from the fruit of a species of Palm, called *Parapi*. This tribe of plants too, the Palms, are so numerous in Guiana, and in their uses so exceedingly diversified, that a volume would scarcely suffice to give a tolerable idea of them. Mr. James Fraser has noticed about fourteen different species growing in the vicinity of his residence at Palm Grove, Tapacoma.

J. H.

THE END.

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